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MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY.

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MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY.

EDITED BY

G. F. STOUT,

WITH THE CO-OPERATION OF PROFESSOR H. SIDGWICK, PROFESSOR W. WALLACE, DR VENN, DR WARD, AND PROFESSOR E. B. TITCHENER.

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MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY.

I.—THE LOGIC OF GEOMETRY.

BY B. A. W. RUSSELL.

IN the present paper, we are not concerned with the correspondence of Geometry with fact; we are concerned with Geometry simply as a body of reasoning, the conditions of whose possibility we wish to examine. For our present purpose, therefore, we have nothing to do with crude or unformed notions of space; we have to do with the conception of space in its most finished and elaborated form, after thought has done its utmost in transforming the intuitional data. Nevertheless, we shall have occasion to remember, from time to time, that there *is* a space-intuition, and that the nature of this intuition makes the conception of space radically and permanently different, in important respects, from that of any other manifold.

I. *The Axiom of Congruence.*

Let us begin with a provisional definition. Geometry, we may say, deals with the comparison and relations of spatial magnitudes. Whether or not geometry has a wider subject-matter than this, we may for the present leave undecided; this much it certainly does deal with. The conception of magnitude, then, is, from the start, a necessary part of Geometry. Some of Euclid's axioms, accordingly, have been classed as arithmetical, and have been supposed to have

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nothing particular to do with space. Such are the axioms that equals added to or subtracted from equals give equals, and that things which are equal to the same thing are equal to one another. These axioms, it is said, are purely arithmetical, and do not, like the others, ascribe an adjective to space. As regards their use in arithmetic, this is of course true. But if an arithmetical axiom is to be applied to spatial magnitudes, it must have some spatial import, and thus even this class is not, in Geometry, *merely* arithmetical. Fortunately, the geometrical element is the same in all the axioms of this class—in fact we can see at once that it can amount to no more than a definition of spatial magnitude. Again, since the space with which Geometry deals is infinitely divisible, a definition of spatial magnitude reduces itself to a definition of spatial equality, for, as soon as we have this last, we can compare two spatial magnitudes by dividing each into a number of equal units, and counting the number of such units in each[1]. The ratio of the number of units is, of course, the ratio of the two magnitudes.

We require, then, at the very outset, some criterion of spatial equality; without such a criterion, Geometry would become wholly impossible. It might appear, at first sight, as though this need not be an axiom, but might be a mere definition. This, however, is not the case, for two distinct spatial magnitudes are necessarily external to one another, and cannot, therefore, as they stand, be directly compared. Euclid gives the requisite axiom in the form: "Magnitudes which exactly coincide are equal." But this form does not clearly bring out the difficulty, for if they exactly coincide, they are not only equal, but identical. It is only when he uses his axiom (as *e.g.* Bk. I. Prop. 4) that we discover the real point of it: the two magnitudes have to be *brought* into coincidence by the motion of one or both of them. Hence if mere motion could alter shapes, our criterion of equality would break down. It follows that the application of the conception of magnitude to figures in space involves the following axiom: *Spatial magnitudes can be moved from place to place without distortion;* or, as it may be put, *Shapes do not in any way depend on absolute position in space.*

The above axiom is the axiom of Congruence, or Free Mobility. I propose to prove (i) that the denial of this

[1] Strictly speaking, this method is only applicable where the two magnitudes are commensurable. But if we take infinite divisibility rigidly, the units can theoretically be taken so small as to obtain any required degree of approximation. The difficulty is the universal one of applying to continua the essentially discrete conception of number.

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axiom would involve logical and philosophical absurdities, so that it must be classed as wholly *a priori*; (ii) that Geometry, if it refused this axiom, would have to set up another far more arbitrary axiom, namely that a shape given in some standard position would in any other position be some definite function of the standard shape and the change of place; (iii) that such an axiom as this last would be a mere convention, since no experience could determine the form of the function to be assumed; and (iv) that Geometry, in setting up this alternative axiom, would be guilty of a philosophic absurdity. The conclusion will be that the axiom cannot be proved or disproved by experience, but is an *a priori* condition of Geometry. As I shall thus be maintaining a position which has been much controverted, especially by Helmholtz and Erdmann, I shall have to enter into the arguments at some length.

A. *Philosophical Argument.* The denial of the axiom involves absolute position, and an action of mere space, *per se*, on things. For the axiom does not assert that real bodies, as a matter of empirical fact, never change their shape in any way during their passage from place to place; on the contrary, we know that such changes do occur, sometimes in a very noticeable degree, and always to some extent. But such changes are attributed, not to the change of place as such, but to physical causes: change of temperature, pressure, etc. What our axiom has to deal with is not actual material bodies, but geometrical figures, and it asserts that a figure which is possible in any one position in space is possible in every other. Its meaning will become clearer by reference to a case where it does not hold, say the space formed by the surface of an egg. Here, a triangle drawn near the equator cannot be moved without distortion to the point, as it would no longer fit the greater curvature of the new position; a triangle drawn near the point cannot be fitted on to the flatter end, and so on. Thus the method of Superposition, such as Euclid employs in I. 4, becomes impossible: figures cannot be freely moved about; indeed, given any figure, we can determine a certain series of possible positions for it on the egg, outside which it becomes impossible. What I assert is, then, that there is a philosophic absurdity in supposing space in general to be of this nature. On the egg we have marked points, such as the two ends: space is not homogeneous, and if things are moved about in it, it must of itself exercise a distorting effect upon them, quite independently of physical causes; if it did not exercise such an effect, the things could not be moved. Thus such a space would not be homogeneous, but would have marked points,

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by reference to which bodies would have absolute position, quite independently of any other bodies. Space would no longer be passive, but would exercise a definite effect upon things, and we should have to accommodate ourselves to the notion of marked points in empty space; these points being marked, not by the bodies which occupied them, but by their effects on any bodies which might from time to time occupy them. This want of homogeneity and passivity is, however, absurd; no philosopher has ever thrown doubt, so far as I know, on these two properties of empty space; indeed they seem to flow from the maxim that nothing can act on nothing, for empty space is rather a possibility of being filled than a real thing given in experience. We must, then, on purely philosophical grounds, admit that a geometrical figure which is possible anywhere is possible everywhere, which is the axiom of Congruence.

B. *Geometrical Argument.* Let us see, next, what sort of Geometry we could construct without this axiom. The ultimate standard of comparison of spatial magnitudes must, as we saw in introducing the axiom, be equality when superposed; but need we, from this equality, infer equality when separated? For the more immediate purposes of Geometry, I believe this would be unnecessary. We might construct a new Geometry, far more complicated than any yet imagined, in which sizes varied with motion on any definite law[1]. Suppose the length of an infinitesimal arc in some standard position were ds; then in any other position p, its length would be $ds \,.\, f(p)$, where the form of the function $f(p)$ must be supposed known. But how are we to determine the position p? For this purpose, we require p's coordinates, *i.e.* some measure of distance from the origin. But the distance from the origin could only be measured if we assumed our law $f(p)$ to measure it by. For suppose the origin to be O, and Op to be a straight line whose length is required. If we have a measuring rod with which we travel along the line and measure successive infinitesimal arcs, the measuring rod will change its size as we move, so that an arc which appears by the measure to be ds will really be $f(s)\,ds$, where s is the previously traversed distance. If, on the other hand, we move our line Op slowly through the origin, and measure each piece as it passes through, our measure, it is true, will not alter, but then we have no means of discovering the law by which any element has changed its length in coming to the origin. Hence, until we assume our function $f(p)$, we have no means of determining p, for we have just seen that distances

[1] Cp. Cayley's *Sixth Memoir upon Quantics*, and Klein's development of it in his *Vorlesungen über Nicht-Euklidische Geometrie*, Vol. I. Chap. ii.

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from the origin can only be estimated by means of the law $f(p)$. It follows that experience can neither prove nor disprove the constancy of shapes throughout motion, since, if shapes were not constant, we should have to *assume* a law of their variation before measurement became possible, and therefore measurement could not itself reveal that variation to us.

Nevertheless, such an arbitrarily assumed law *does* give a mathematically possible Geometry. The fundamental proposition, that two magnitudes which can be superposed in any one position can be superposed in any other, still holds. For two infinitesimal arcs, whose lengths in the standard position are ds_1 and ds_2, would in any other position p have lengths $f(p) \cdot ds_1$ and $f(p) \cdot ds_2$, so that their ratio would be unaltered. From this constancy of ratio, as we know through Riemann and Helmholtz, the above proposition follows. Hence all that Geometry requires, as a basis for measurement, is an axiom that the alteration of shapes during motion follows a definite known law, such as that assumed above.

This law, since it is a prerequisite of measurement, cannot be derived from experience, but must be arbitrarily assumed. Mathematically, in short, it is a mere convention. But philosophically, as we have seen, any form for the law, except the special form contained in the axiom of Congruence, involves absolute position and an action of empty space *per se* on things. Fortunately, therefore, where experience leaves us in the lurch, we have an *a priori* ground for accepting the geometrically simplest alternative, viz., that shapes are completely independent of motion in space.

As the axiom of Congruence is the most fundamental of all the axioms of Geometry, and as the Pangeometers have generally held that it is derived entirely from experience of rigid bodies, I may perhaps be pardoned for dwelling on it a little longer. If I am right in contending that this axiom is necessary *a priori*, Helmholtz's view, that it asserts the rigidity of actual bodies, is already disproved. For, as he rightly points out, such rigidity could only be proved empirically, and the axiom would therefore be itself empirical, as much as the law of gravitation. But if what I have said about its necessity for Geometry is correct, Helmholtz's view involves a logical fallacy: for unless we assume congruence, or the more general axiom suggested above, there would remain no geometrical method of discovering whether or how a body had changed its shape in moving from place to place, and we could thus never discover whether there were rigid bodies or not. Since our own bodies would have to share the change when we moved, there is no reason for supposing that our sensations would reveal the

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change to us; indeed the whole conception of spatial magnitude becomes meaningless, and there would therefore be nothing left for sensations to tell us about it. If our measure changed its shape, as it would have to do, in the same manner as the thing measured, we could never discover such change. But, a supporter of Helmholtz might object, unless you assume your measure to be a rigid body, *you* are equally unable to measure things—and rigidity *can* only be known by experience. Unless you assume some bodies, such as the platinum bar in the Exchequer, which, under certain conditions, *e.g.* constant temperature, are approximately rigid, it becomes impossible to apply your Geometry to concrete things—it is reduced to what Helmholtz mockingly calls "transcendental" as opposed to "physical" Geometry.—This objection is plausible, but I believe we can answer it. (1) In the first place, the conception of rigidity is meaningless until we have the axiom of Congruence. If mere space did not allow, in one place, a shape which it had allowed in another, we should not be able to bring our measure, unchanged, to the new place; if a body, in the passage from the first to the second place, had suffered deformation, we should not be able to estimate the extent of that deformation. Non-rigidity, in an actual body, involves the continued possibility of the old shape, together with an actual departure from it. (2) There are, as a matter of fact, no such things as perfectly rigid bodies, and yet Geometry remains. All bodies change their size with changes of temperature; some change with pressure. If the atomic theory be true, nothing *can* be rigid except the ultimate atoms. It would be odd if the most fundamental postulate of Geometry, on which all spatial measurement depends, were as a matter of fact untrue. (3) To pass to positive objections, Geometry deals, not with matter, but with space. If we admitted Helmholtz's view, the distinction between Physics and Geometry would break down. What our axiom asserts about real bodies is not that their shapes do not change, but that such changes of shape as they do undergo are due to physical, not to geometrical, causes. This makes the investigation of these physical causes possible, by the ordinary inductive methods. We can compare two bodies, first at the same temperature, then at different temperatures, and thus discover the effect of temperature on volume. But such comparison, as we have seen, is only possible by the help of the axiom of Congruence, which alone makes spatial magnitude an intelligible property of a body. What we require is not the existence of actual rigid bodies, but the axiom that bodies, *under precisely similar physical conditions*, preserve their shapes in spite of changing geometrical conditions. The platinum bar

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in the Exchequer varies in size, but that does not upset our Geometry; we specify a certain temperature at which its size is to be taken, and at this temperature our axiom tells us that its length is constant, in spite of the earth's motion in space. Of course, when we apply Geometry to real bodies, an empirical element appears in the axiom, for it is only empirically and approximately that we can know the physical conditions to be the same in two cases. But geometrical shapes are not necessarily bodies—indeed bodies never have accurate geometrical shapes—and the properties of space need not be confounded with those of matter. Thus there seems no ground for giving to our axiom the untrue sense of affirming the actual existence of rigid bodies. What it does assert, at bottom, is the impossibility of absolute position, and the homogeneity of space.

There remain one or two objections to be answered. First, how do we obtain equality in solids, and in Kant's case of right and left gloves or right- and left-handed screws, where actual superposition is impossible? And second, how can we take Congruence as the only possible basis of spatial measurement, when we have before us the case of time, where no such thing as Congruence is conceivable? I will consider these objections in turn.

(1) How do we measure the equality of solids in Geometry? These could only be brought into actual congruence if we had a fourth dimension to operate in, and from what I have said before of the absolute necessity of this test, it might seem as though we should be left here in utter ignorance. Euclid is silent on the subject, and in all works on Geometry it is assumed as self-evident that two cubes of equal side are equal. This assumption suggests that we are not so badly off as we should have been without congruence as a test of equality in one and two dimensions; for now we can at least be sure that two cubes have all their sides and all their faces equal. Two such cubes differ, then, in no sensible spatial quality save position, for volume, in this case at any rate, is not a sensible quality. They are, therefore, as far as such qualities are concerned, indiscernible; if their places were interchanged, we might know the change by their colour or by some other non-geometrical property; but so far as any property of which Geometry can take cognizance is concerned, everything would seem as before. To suppose a difference of volume, then, would be to ascribe an effect to mere position, which we saw to be inadmissible while discussing congruence; except as regards position, they are geometrically indiscernible, and we may call to our aid the Identity of Indiscernibles to establish their agreement in the one remaining geometrical property of volume. This may seem

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rather a strange principle to use in Mathematics, and for Geometry their equality is, perhaps, best regarded as a convention; but if we demand a philosophical ground for this convention, it is, I believe, only to be found in the Identity of Indiscernibles. Of course, as soon as we have established this one case of equality of volumes, the rest of the theory follows; as appears from the ordinary method of integrating volumes, by dividing them into small cubes.

Thus congruence *helps* to establish 3-dimensional equality, though it cannot directly *prove* such equality; and the same philosophical principle, of the homogeneity of space, by which congruence was proved, comes to our rescue here. But how about right-handed and left-handed screws? Here we can no longer apply the identity of indiscernibles, for the two are very well discernible. As with solids, so here, actual superposition would only be possible if we had a fourth dimension to operate in. But again, as with solids, so here, Congruence can help us much. It can enable us, by ordinary measurement, to show that the internal relations of both screws are the same, and that the difference lies only in their relations to other things in space. Knowing these internal relations, we can calculate, by the Geometry which Congruence has rendered possible, all the geometrical properties of these screws—radius, pitch, etc.—and can show them to be severally equal in both. But this is all we require. Mediate comparison is possible, though immediate comparison is not. Both can, for instance, be compared with the cylinder on which both would fit, and thus their equality can be proved. A precisely similar proof holds, of course, for the other cases—right and left gloves, spherical triangles, etc. On the whole, these cases confirm my argument; for they show, as Kant intended them to show, the essential relativity of space.

(2) As regards time, no Congruence is here conceivable, for to effect Congruence requires always—as we saw in the case of solids—one more dimension than belongs to the magnitudes compared. No day can be brought into temporal coincidence with any other day, to show that the two exactly cover each other; we are therefore reduced to the arbitrary assumption that some motion or set of motions, given us in experience, is uniform. Fortunately, we have a large set of motions which all roughly agree: the swing of the pendulum, the rotation and revolution of the earth and the planets, etc. These do not exactly agree, but they lead us to the laws of motion, by which we are able, on our arbitrary hypothesis, to estimate their small departures from uniformity; just as the assumption of Congruence enabled us to measure the departures of actual bodies from rigidity. But here, as there, another possibility is mathemati-

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cally open to us, and can only be excluded by its philosophic absurdity; we might have assumed that the above set of approximately agreeing motions all had velocities which varied approximately as some arbitrarily assumed function of the time $f(t)$ say, measured from some arbitrary origin. Such an assumption would still keep them as nearly synchronous as before, and would give an equally possible, though more complex, system of Mechanics; instead of the first law of motion, we should have the following: A particle preserves in its state of rest, or of rectilinear motion with velocity varying as $f(t)$, except in so far as it is compelled to alter that state by the action of external forces. Such a hypothesis *is* mathematically possible, but, like the similar one for space, it is excluded by the fact that it involves absolute time, as a determining agent in change, whereas time can never, philosophically, be anything but a passive holder of events, abstracted from change.

I have introduced this parallel from time, not as really bearing on the argument, but as a simpler case which may serve to illustrate my reasoning in the more complex case of space. For since time, in Mathematics, is one-dimensional, the mathematical difficulties are simpler than in Geometry; and although nothing accurately corresponds to Congruence, there is a very similar mixture of mathematical and philosophical necessity, giving, finally, a thoroughly definite axiom as the basis of time-measurement, corresponding to Congruence as the basis of space-measurement[1].

(3) The case of time-measurement suggests one last objection which might be urged against the absolute necessity of the axiom of Congruence. Psychophysics has shown that we have an approximate power, by means of what may be called the sense of duration, of immediately estimating equal short times. This, it may be said, establishes a rough measure independent of any assumed uniform motion, and in space also we may be said to have a similar power of immediate comparison. We can see, by immediate inspection, that the sub-divisions on a foot-rule are not grossly inaccurate, and so, it may be said, we both have a measure independent of Congruence, and also could discover, by experience, any gross departure from Congruence. Against this view, however, there is at the outset a very fundamental psychological objection. It appears that all our comparison of spatial magnitudes proceeds by ideal superposition. Thus James says (*Psychology*, Vol. II. p. 152): "Even where we only feel one sub-division to be vaguely larger

[1] It is also important to observe that since time, in the above account, is measured by motion, its measurement presupposes that of spatial magnitudes.

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or less, the mind must pass rapidly between it and the other sub-division, and receive the immediate sensible shock of the *more*," and "so far as the sub-divisions of a sense-space are to be *measured* exactly against each other, objective forms occupying one sub-division must be directly or indirectly superposed upon the other[1]." Even if we waive this fundamental objection, however, others remain. To begin with, such judgments of equality are only very rough approximations, and cannot be applied to lines of more than a certain length, if only for the reason that such lines cannot well be seen together. Thus this method can only give us any security in our own immediate neighbourhood, and could in no wise warrant such operations as would be required for the construction of maps, etc., much less the measurement of astronomical distances. They might just enable us to say that some lines were longer than others, but they would leave Geometry in a position no better than that of the Hedonical Calculus, in which we depend on a purely subjective measure. So inaccurate, in fact, is such a method acknowledged to be, that the foot-rule is as much a need of daily life as of science. Besides, no one would trust such immediate judgments, but for the fact that the stricter test of Congruence to some extent confirms them; if we could not apply this test, we should have no ground for trusting them even as much as we do. Thus we should have, here, no real escape from our absolute dependence upon the axiom of Congruence.

One last elucidatory remark is necessary before our proof of the axiom of Congruence can be considered complete. We spoke, above, of the Geometry on an egg, where Congruence does not hold. What, I may be asked, is there, about a thoroughly non-Congruent Geometry, more impossible than this Geometry on the egg? The answer is obvious. The Geometry of non-congruent surfaces is *only* possible by the use of infinitesimals, and in the infinitesimal all surfaces become plane. The fundamental formula, that for the length of an infinitesimal arc, is only obtained on the assumption that such an arc may be treated as a straight line, and that Euclidean Plane Geometry may be applied in the immediate neighbourhood of any point. If we had not our Euclidean measure, which could be moved without distortion, we should have no method of comparing small arcs in different places, and the Geometry of non-congruent surfaces would break down. Thus the axiom of Congruence, as regards three-dimensional space, is necessarily implied and presupposed in the Geometry of non-congruent

[1] Cp. Stumpf, *Ursprung der Raumvorstellung*, p. 68.

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surfaces; the possibility of the latter, therefore, is a dependent and derivative possibility, and can form no argument against the *a priori* necessity of Congruence.

It is to be observed that the axiom of Congruence or Free Mobility, as I have enunciated it, includes also the axiom to which Helmholtz gives the name of Monodromy. This asserts that a body does not alter its dimensions in consequence of a complete revolution through four right angles, but occupies at the end the same position as at the beginning. On the mathematical necessity of making a separate axiom of this property of space, there is disagreement among experts; philosophically it is plainly a particular case of Congruence[1] and indeed a particularly obvious case, for a translation really does make some change in a body, namely a change in position, but a rotation through four right angles may be supposed to have been performed any number of times without appearing in the result, and the absurdity of ascribing to space the power of making bodies grow in the process is palpable; everything that was said above on Congruence in general applies with even greater evidence to this special case.

To sum up: the axiom of Free Mobility contains whatever is geometrical in the so-called arithmetical axioms, as well as Euclid's 8th axiom. It supplies a measure of spatial equality for lines, surfaces and angles, and so of spatial magnitude in general, but this is *geometrically* not the only possible way of supplying such a measure. We might suppose that all geometrical figures varied their shapes and sizes in any assumed definite way, so that, say, an elementary line, whose length in a standard position was ds, became, in the position p of a length $ds \cdot F(p)$. As, however, the position p could only be defined by the lengths of its coordinates, and these lengths could only be discovered by means of the above assumed law, the law could never be either proved or disproved by Geometry, and would, therefore, be of the nature of an arbitrary convention. This being so, it is open to us, without danger to the validity of Geometry, to choose any form for $f(p)$ which may be convenient; we may therefore make $f(p)$ a constant, unity, by which means we reduce the above axiom to that of Congruence. But when we pass to the philosophical point of view, it appears that the axiom flows from the general principle of the passivity of mere space in relation to objects, so that philosophically it is more than a convention; it is even necessary *a priori*, and non-Euclidean systems (with the

[1] As is Helmholtz's other axiom, that the possibility of superposition is independent of the course pursued in bringing it about.

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apparent exception of Cayley's) do not, as a matter of fact, ever dispense with it.

II. *The Axiom of Dimensions.*

We have seen, in discussing the axiom of Congruence, that all position is relative, that is, a position exists only by virtue of relations[1]. It follows that, if positions can be defined at all, they must be uniquely and exhaustively described by some finite number of such relations. If Geometry is to be possible, it must happen that, after enough relations have been given to determine a point uniquely, its relation to any fresh known point must be deducible from the relations already given. Hence we obtain, as an *a priori* condition of Geometry, logically indispensable to its existence, the axiom that *Space must have a finite integral number of Dimensions.* For every relation required in the definition of a point constitutes a dimension, and a fraction of a relation is meaningless. The number of relations required must be finite, for an infinite number of dimensions would be practically impossible to determine. If we remember our axiom of Congruence, and remember also that space is a continuum, we may state our axiom in the form given by Helmholtz: "In a space of n dimensions the position of a point is uniquely determined by the measurement of n continuous independent variables (coordinates)[2]."

So much, then, is *a priori* necessary to Geometry. The restriction of the dimensions to three seems, on the contrary, to be wholly the work of experience. This restriction cannot be logically necessary, for as soon as we have formulated any analytical system, it appears wholly arbitrary. Why, we are driven to ask, cannot we add a fourth coordinate to our x, y, z, or give a geometrical meaning to x^4? In this more special form, we are tempted to regard the axiom of dimensions, like the number of inhabitants of a town, as a purely statistical fact, with no greater necessity than such facts have.

Geometry affords intrinsic evidence of the truth of my division of the axiom of dimensions into an *a priori* and empirical portion. For the extension of the number of dimensions to four, or to n, alters nothing in plane and solid Geometry, but only

[1] The question "Relations to what?", is a question involving many difficulties. It will be touched on later in this article, but can only be answered by abandoning the purely geometrical standpoint. For the present, in spite of the glaring circle involved, I shall take the relations as relations to other positions.

[2] *Wiss. Abh.* Bd. II. S. 614.

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adds new branches which interfere in no way with the old; but *some* definite number of dimensions is assumed in all Geometries, nor is it possible to conceive of a Geometry which should be free from this assumption.

Let us, since the point seems of some interest, and has, to my knowledge, never been noticed before, repeat our proof of the apriority of this axiom from a slightly different point of view. We will begin, this time, from the most abstract conception of space, such as we find in Riemann's dissertation. We have, here, an ordered manifold, infinitely divisible and allowing of free mobility. Free mobility involves, as we saw, the power of passing continuously from any one point to any other, by any course which may seem pleasant to us; it involves, also, that, in such a course, no changes occur except changes of mere position; *i.e.* positions do not differ from one another in any qualitative way. (This absence of qualitative difference is the distinguishing mark of space as opposed to other manifolds, such as the colour- and tone-systems; in these, every element has a definite qualitative sensational value, whereas, in space, the sensational value of a position depends wholly on its relation to our own body, and is thus not intrinsic, but relative.) From the absence of qualitative differences among positions, it follows logically that positions exist only by virtue of other positions; one position differs from another just because they are two, not because of anything intrinsic in either. Position is thus defined simply and solely by relation to other positions. Any position, therefore, is completely defined when, and only when, enough such relations have been given to enable us to determine its relation to any new position, this new position being defined by the same number of relations. Now in order that such definition may be at all possible, a finite number of relations must suffice. But every such relation constitutes a dimension. Therefore, if Geometry is to be possible, it is *a priori* necessary that space should have a finite integral number of dimensions.

The limitation of the dimensions to three is, as we have seen, empirical; nevertheless, it is not liable to the inaccuracy and uncertainty which usually belong to empirical knowledge. For the alternatives which logic leaves to sense are discrete—if the dimensions are not three, they must be two or four or some other number—so that *small* errors are out of the question. Hence the final certainty of the axiom of three dimensions, though in part due to experience, is of quite a different order from that of (say) the law of Gravitation. In the latter, a small inaccuracy might exist and remain undetected; in the former, an error would have to be so considerable as to be utterly

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impossible to overlook. It follows that the certainty of our whole axiom is almost as great as that of the *a priori* element, since this element leaves to sense a definite disjunction of discrete possibilities.

III. *The Straight Line.* I have hitherto spoken of relations between points as though the meaning of such relations were self-evident; I have spoken, also, of distances and magnitudes as though these were terms which any one might use unchallenged. The time has now come to examine more minutely into these assumptions.

First of all, what *is* the relation between two points? The answer seems evident: the relation is their distance apart. Well and good: but how is their distance to be measured? It must be measured by some curve which joins the two points, and if it is to have a unique value, it must be measured by a curve which those two points completely define. But such a curve is a straight line, for a straight line is the only curve determined by any two of its points. Hence, *if two points are to have to each other a determinate relation, without reference to any other point or figure in space, space must allow of curves uniquely determined by any two of their points*, i.e. *of straight lines.*

This is the axiom of the straight line; but we cannot regard the *a priori* certainty of this axiom as established by so summary an argument. In the first place, our axiom is as yet hypothetical—we have still to discuss whether it is logically possible for the relation between two points to be dependent on the rest of space, or on some part of the rest of space. If this possibility is successfully disposed of, it remains to show, more rigidly than above, that the relation between two points can only have a unique value if it is measured by a curve which those two points completely define. In short, we shall have to consider the conditions for the measurement of distance. Here we shall have a very formidable difficulty in spherical Geometry, which may compel us somewhat to modify our axiom. In the course of the discussion, it will appear that points have no meaning apart from lines, nor lines apart from points; thus our definition of the straight line will become circular, and we shall be forced to admit the necessity of some extra-geometrical aid in framing our idea of the straight line.

(1) What warrant have we for supposing that two points must have to each other a determinate relation, independent of the rest of space? Our argument is already rather risky, since we have said that points can only be determined by their relations to other points, and these others by relations to fresh points, and so on *ad infinitum*. This procedure involves either

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a circle or an infinite regress[1], either of which is a logical fallacy, which we are not yet in a position to resolve. Hence our reasoning, as resting on this fallacy, is necessarily rather precarious. Nevertheless, we will see what is to be said.

Our great resource, here as always, is the homogeneity of space. It is plain that any two points must have *some* relation to each other, and it follows from the homogeneity of space that two points having the same relation can be constructed in any other part of space. Using the axiom of Free Mobility, we may express this fact thus: The figure formed of the two points can be moved about in space, in any way we choose, without being altered in any way. Consequently, the relation between the two points cannot be altered by motion. But, if that relation were in any way dependent on the position of the two points in space, it would necessarily be altered by change of position. Now relation to other figures in space means nothing but position, or some factor in the determination of position, and is thus necessarily altered by motion[2]. It follows that the relation between the two points, being unaltered by motion, must be independent of the rest of space. Thus two points have to each other a definite relation, uniquely determined by those two points.

But why, it may be asked, should there be only one such relation between two points? Why not several? The answer to this lies in the fact that points are wholly constituted by relations, and have no intrinsic nature of their own. A point is defined by its relations to other points, and when once the relations necessary for definition have been given, no fresh relations to the points used in definition are possible, since the point defined has no qualities from which such relations could flow. Now one relation to any one other point is as good for definition as more would be, since however many we had, they would all remain unaltered in a motion of both points. Hence there can only be one relation determined by any two points.

(2) We have thus disposed of the first objection—two points have one and only one relation uniquely determined by those two points. This relation we call their distance apart. It remains to consider the conditions of the measurement of

[1] Corresponding to the two possibilities of infinite, and of finite but unbounded space.

[2] It may be objected that, if the relation were, for instance, distance from some plane, motion parallel to that plane would not alter the relation. But the axiom of Free Mobility admits of no exceptions, so that the motion of the two points cannot be restricted to motion parallel to that plane. Motion of a general kind will alter any external relation of the figure moved.

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distance, *i.e.* how far a unique value for distance involves a curve uniquely determined by the two points.

We are accustomed to the definition of the straight line as the *shortest* distance between two points, which implies that distance might equally well be measured by curved lines. This implication I believe to be false, for the following reasons. When we speak of the length of a curve, we can give a meaning to our words only by supposing the curve divided into infinitesimal rectilinear arcs, whose sum gives the length of an equivalent straight line; thus, unless we presuppose the straight line, we have no means of comparing the lengths of different curves, and can therefore never discover the applicability of our definition. It might be thought, perhaps, that some other line, say a circle, might be used as the basis of measurement. But in order to estimate in this way the length of any curve other than a circle, we should have to divide the curve into infinitesimal circular arcs. Now two successive points do not determine a circle, so that an arc of two points would have an indeterminate length. It is true that, if we exclude infinitesimal radii for the measuring circles, the lengths of the infinitesimal arcs would be determinate, even if the circles varied, but that is only because all the small circular arcs through two consecutive points coincide with the straight line through those two points. Thus, even with the help of the arbitrary restriction to a finite radius, all that happens is that we are brought back to the straight line. If, to mend matters, we take *three* consecutive points of our curve, and reckon distance by the arc of the circle of curvature, the notion of distance loses its fundamental property of being a relation between *two* points. For two consecutive points of the arc could not then be said to have any corresponding distance apart—three points would be necessary before the notion of distance became applicable. Thus the circle is not a possible basis for measurement, and similar objections apply, of course, with increased force, to any other curve. All this argument is designed to show, in detail, the logical impossibility of measuring distance by any curve not completely defined by the two points whose distance apart is required. If in the above we had taken distance as measured by circles *of given radius*, we should have introduced into its definition a relation to other points besides the two whose distance was to be measured, which we saw to be a logical fallacy. Besides, how are we to know that all the circles have equal radii, until we have an independent measure of distance?

A straight line, then, is not the *shortest* distance, but it is simply *the* distance between two points—so far, this conclusion

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has stood firm. But suppose we had two or more curves through two points, and that all these curves were congruent *inter se*. We should then say, in accordance with the axiom of Congruence, that the lengths of all these curves were equal. Now it might happen that, although no one of the curves was uniquely determined by the two end-points, yet the common length of all the curves was so determined. In this case, what would hinder us from calling this common length the distance apart, although no unique figure in space corresponded to it? This is the case contemplated by spherical Geometry, where, as on a sphere, antipodes can be joined by an infinite number of geodesics, all of which are of equal length. The difficulty supposed is, therefore, not a purely imaginary one, but one which modern Geometry forces us to face. I shall consequently discuss it at some length.

To begin with, I must point out that my axiom is not quite equivalent to Euclid's. Euclid's axiom states that two straight lines cannot enclose a space, *i.e.* cannot have more than one common point. Now if every two points, without exception, determine a unique straight line, it follows, of course, that two different straight lines can have only one point in common—so far, the two axioms are equivalent. But it may happen, as in Spherical Space, that two points *in general* determine a unique straight line, but fail to do so when they have to each other the special relation of being antipodes. In such a system, every pair of straight lines in the same plane meet in two points, which are each other's antipodes; but two points, *in general*, still determine a unique straight line[1]. We are still able, therefore, to obtain distances from unique straight lines, except in limiting cases; and in such cases, we can take any point intermediate between the two antipodes, join it by the *same* straight line to both antipodes, and measure its distances from those antipodes in the usual way. The sum of these distances then gives a unique value for the distance between the antipodes.

Thus, even in spherical space, we are greatly assisted by the axiom of the straight line; all linear measurement is effected by it, and exceptional cases can be treated, through its help, by the usual methods for limits. Spherical space, therefore, is not so adverse as it at first appeared to be to the *a priori* necessity of the axiom. Nevertheless we have, so far, not attacked

[1] The distinction, in metageometry, between positive and negative space-constant does not lie, as is generally supposed, in the validity of the axiom of the straight line. For Klein has shown that in elliptic space, which also has positive space-constant, the axiom holds without exception.

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the kernel of the objection which spherical space suggested. To this attack it is now our duty to proceed.

It will be remembered that, in our *a priori* proof that two points must have one definite relation, we held it impossible for those two points to have, to the rest of space, any relation which would be unaltered by motion. Now in spherical space, in the particular case where the two points are antipodes, they *have* a relation, unaltered by motion, to the rest of space—the relation, namely, that their distance is half the circumference of the universe. In our former discussion, we assumed that any relation to outside space must be a relation of position—and a relation of position must be altered by motion. But with a finite space, in which we have absolute magnitude, another relation becomes possible, namely, a relation of magnitude. Antipodal points, accordingly, like coincident points, no longer determine a unique straight line. And it is instructive to observe that there is, in consequence, an ambiguity in the expression for distance, like the ordinary ambiguity in angular measurement. If k be the space-constant, and d be one value for the distance between two points, $2\pi kn \pm d$, where n is any integer, is an equally good value. Distance is, in short, a periodic function like angle. Whether or not such a system is philosophically permissible, I shall consider later—for the present, I am content to point out that such a state of things rather confirms than destroys my contention that distance depends on a curve uniquely determined by two points. For as soon as we drop this unique determination, we see ambiguities creeping into our expression for distance. Distance still has a set of discrete values, corresponding to the fact that, given one point, the straight line is uniquely determined for all other points but one, the antipodal point. It is tempting to go on, and say: If through *every* pair of points there were an infinite number of the curves used in measuring distance, distance would be able, for the same pair of points, to take, not only a discrete series, but an infinite *continuous* series, of values.

This, however, is mere speculation. I come now to the *pièce de résistance* of my argument. The ambiguity, in spherical space, arose, as we saw, from a relation of *magnitude* to the rest of space—such a relation being unaltered by motion of the two points, and therefore falling outside our introductory reasoning. But what is this relation of magnitude? Simply a relation of the *distance* between the two points to a *distance* given in the nature of the space in question. It follows that such a relation *presupposes* a measure of distance, and need not, therefore, be contemplated in any argument which deals with the *a priori* requisites for the possibility of definite distances.

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I have now shown, I hope conclusively, that spherical space affords no objection to the apriority of my axiom. Any two points have one relation, their distance, which is independent of the rest of space, and this relation requires, as its measure, a curve uniquely determined by those two points. I might have taken the bull by the horns, and said: Two points *can* have no relation but what is given by lines which join them, and therefore, if they have a relation independent of the rest of space, there must be one line joining them which they completely determine. Thus James says[1]:

"Just as, in the field of quantity, the relation between two numbers is another number, so *in the field of space the relations are facts of the same order with the facts they relate*.... When we speak of the relation of direction of two points toward each other, we mean simply the sensation (?) of the line that joins the two points together. *The line is the relation*....*The relation of position between the top and bottom points of a vertical line is that line, and nothing else.*"

If I had been willing to use this doctrine at the beginning, I might have avoided all discussion. A unique relation between two points *must*, in this case, involve a unique line between them. But it seemed better to avoid a doctrine not universally accepted, the more so as I was approaching the question from the logical, not the psychological, side. After disposing of the objections, however, it is interesting to find this confirmation of the above theory from so different a standpoint. Indeed, I believe James's doctrine could be proved to be a logical necessity, as well as a psychological fact. For what sort of thing can a spatial relation between two distinct points be? It must be something spatial, and it must be something which somehow bridges the gulf of their disparateness. It must be something at least as real and tangible as the points it relates, since we saw that points are wholly constituted by their relations. There seems nothing which can satisfy all these requirements, except a line joining them. Hence, once more, a unique relation must involve a unique line. That is, linear magnitude is logically impossible, unless space allows of curves uniquely determined by any two of their points.

To sum up: If points are defined simply by relations to other points, *i.e.* if all position is relative, every point must have to every other point one, and only one, relation independent of the rest of space. This relation is the distance between the two points. Now a relation between two points can only be defined by a line joining them—nay further, it may

[1] *Psychology*, Vol. II. pp. 149–150.

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be contended that a relation can only *be* a line joining them. Hence a unique relation involves a unique line, *i.e.* a line determined by any two of its points. Only in a space which admits of such a line is linear magnitude a logically possible conception. But, when once we have established the possibility, in general, of drawing such lines, and therefore of measuring linear magnitudes, we may find that a certain magnitude has a peculiar relation to the constitution of space. The straight line may turn out to be of finite length, and in this case its length will give a certain peculiar linear magnitude, the space-constant. Two antipodal points, that is, points which bisect the entire straight line, will then have a relation of magnitude which, though unaltered by motion, is rendered peculiar by a certain constant relation to the rest of space. This peculiarity presupposes a measure of linear magnitude in general, and cannot therefore upset the apriority of the axiom of the straight line. But it destroys, for points having the peculiar antipodal relation to each other, the argument which proved that the relation between two points could not, since it was unchanged by motion, have reference to the rest of space. Thus it is intelligible that, for such special points, the axiom breaks down, and an infinite number of straight lines are possible between them; but unless we had started with assuming the general validity of the axiom, we could never have reached a position in which antipodal points could have been known to be peculiar, or indeed any position which would enable us to give any definition whatever of particular points.

In connection with the straight line, it will be convenient to say a few words about the logical conditions of the possibility of a coordinate system. Much recent Geometry, more especially that of Cayley and Klein, begins, if I have understood it aright, by presupposing a coordinate system, without considering whether the axioms set forth at the start are sufficient to make such a system possible. I am going to contend, here, that no system of coordinates can be set up without presupposing the straight line as the measure of distance. Cayley and Klein begin with coordinates, and proceed to *define* distance, more or less arbitrarily, as a function of coordinates; this is, I think, a logical fallacy, as I shall now attempt to prove.

In the first place, a point's coordinates constitute a complete definition of it; now a point can only be defined, as we have seen, by its relations to other points, and these relations can only be defined by means of the straight line. Consequently, any system of coordinates must involve the straight line, as the basis of its definitions of points.

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This *a priori* argument, however, though I believe it to be quite sound, is not likely to carry conviction to any one persuaded of the opposite. Let us, therefore, examine co-ordinate systems in detail, and show, in each case, their dependence on the straight line.

We have already seen that the notion of distance involves the straight line. We cannot, therefore, define our coordinates in any of the ordinary ways, as the distances from three planes, lines, points, spheres, or what not. Polar coordinates are impossible, since—waiving the straightness of the radius vector—the length of the radius vector becomes unmeaning. Von Standt's projective construction[1] proceeds entirely by the help of straight lines. Triangular coordinates involve not only angles, which must in the limit be rectilinear, but straight lines, or at any rate some well-defined curves. Now curves can only be defined in two ways: either by relation to the straight line, as *e.g.* by the curvature at any point, or by purely analytical equations, which presuppose an intelligible system of coordinates. What methods remain for assigning these arbitrary values to different points? Nay, how are we to get any estimate of the difference—to avoid the more special notion of distance—between two points? The very notion of a point has become illusory. When we have a coordinate system, we may define a point by its three coordinates; in the absence of such a system, we may define the notion of point *in general* as the intersection of three surfaces or of two curves. Here we take surfaces and curves as notions which intuition makes plain, but if we wish them to give us a precise numerical definition of *particular* points, we must specify the kind of surface or curve to be used. Now this, as we have seen, is only possible when we presuppose either the straight line, or a coordinate system.—It follows that every coordinate system presupposes the straight line, and is logically impossible without it.

I may point out, as a corollary, that the straight line cannot be defined as a curve of the first degree, since this involves a coordinate system. When we have the straight line, it follows from its definition—as a curve determined by two points—that its equation will be of the first degree, but to give this property as a definition is to put the cart before the horse.

The above discussion has shewn, particularly in treating of coordinate systems, that points can only be defined by the help of the straight line. But we have defined the straight line as a curve determined by two points. Our logic is therefore

[1] v. Klein, *Nicht-Euklid.*, I. p. 338 ff.

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circular, and—unless an error has crept into our reasoning—it is *necessarily* circular. This fact is a warning that we have exhausted the powers of geometrical logic, and must turn for aid to something more concrete and self-subsistent than geometrical space[1].

Before ending this paper, let us briefly sum up the argument we have just concluded. Geometry, as we defined it in the beginning, deals with spatial magnitudes and their relations, while measurement may be defined as the comparison of any magnitude with a unit of its own kind. Starting from these definitions, we saw that all geometry may be regarded as spatial measurement, mediate or immediate. Accordingly it is *a priori* necessary, if Geometry is to be logically possible, that space should be such as to render possible (subject to the inevitable errors of observation) accurate and unequivocal measurement of spatial magnitudes. The whole task of our chapter has been, accordingly, to find the necessary and sufficient conditions of such measurement. We found, first, since spatial magnitudes are given, to begin with, in different places, that comparison of them will only be possible if they are unaltered by the motion necessary for superposition. This led to the Axiom of Free Mobility, which turned out to be equivalent to the homogeneity of space, or, as it may be called, the complete relativity of position.

We then saw that position, being relative, must be defined—if it can be defined at all—by some definite number of relations. Each of these relations constitutes a dimension, so that we obtain the axiom: Space must have a finite integral number of dimensions.

The above definition of dimensions, as the relations necessary to define positions, or points, led naturally to the enquiry: What sort of relations are they which define our points and constitute our dimensions? We found that any relation between two points was measured by—nay, actually

[1] Throughout the above discussions, I have freely used the postulate of Infinite Divisibility. This has sometimes been supposed to involve difficulties, though I have never been able to feel their force. Of course the postulate applies only to the *conception* of space, not to the intuition—as regards the latter, Hume's contentions as to the *minimum sensibile* remain perfectly valid. But the conception of space is that of a continuum, and I am unable to see how a continuum can be other than infinitely divisible. Moreover, the very essence of space, as conceived by Geometry, is relativity and mutual externality of parts, which makes the notion of an atomic unit of finite extension particularly preposterous. Such a limit to divisibility is open to the same objections as a boundary to space—it assigns a reality and power to empty space, such as it cannot conceivably have. On this postulate, therefore, I have no more to say. It seems to me unimpeachable and wholly *a priori*.

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was—some curve between those points. We found that our need of relations adequate to definition could only be satisfied if two points had, *in general*, a unique relation, called distance, defined by a curve which the two points uniquely determined. This curve is the straight line. In our proof of the necessity of such a relation, however, we supposed that, so far, we had no measure of distance; when the straight line has enabled us to establish distance for every *general* point-pair, we may find one distance bound up in the nature of space. Corresponding to this distance, the curve defining the relation of a point-pair *may* not be unique. This argument, however, only shows a logical possibility—it remains for special mathematics to discuss when or how it is realized.

With the above axioms, we have, I think, all that is *a priori* necessary to the establishment of a Geometry. A Geometry using no axioms but the above will be wholly *a priori*, taking nothing from experience but the one fundamental property of space, that points and positions have not an intrinsic, but only a relative nature. This is the quality which distinguishes space from any other manifold—in the colour and tone-systems, every element has an intrinsic nature, sensationally given, from which the relations between the elements are intellectually constructed. In space, on the contrary, the relations also are sensationally given, and the elements (points) are never given except as terms in a relation. We may then state the problem we have been dealing with above in the following form: Given a manifold in which the elements have not an intrinsic, but only a relative being, what postulates are *a priori* necessary for its exact quantitative treatment? The postulates required have turned out, as might have been expected, to be exactly those which Euclid and the Pangeometers have in common. The axiom of parallels, the three dimensions, and the axiom of the straight line in the more special form given by Euclid, have not been found to be logically inevitable. These, then, may be supposed to derive their evidence from intuition. Finally, the postulate from which the whole discussion started, the relativity of position, made it impossible to avoid circles in our definitions: points could only be defined by lines, and lines by points. Thus, even in the *a priori* part of Geometry, we have a space which cannot stand by itself, a thing all relations, without any kernel of thinghood to which the relations can be attached. This forces us to attempt a resolution of the contradiction by abandoning the purely geometrical standpoint; but such an attempt would fall outside the limits of the present paper, and would only be possible on the basis of a general metaphysic.

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II.—SENSE, MEANING AND INTERPRETATION. (I)

By V. Welby.

The drawbacks and even dangers of linguistic ambiguity and obscurity have always been more or less recognised and deplored, and most of us have exhorted others and have been ourselves exhorted to be clear and definite in statement and exposition, and not to wander from the 'plain meaning' or the 'obvious sense' of the words which we might have occasion to use. For it is undeniable that obscurity or confusion in language, if it does not betray the same defect in thought, at least tends to create it. The clearest thinking in the world could hardly fail to suffer if *e.g.* an Englishman could only express it in broken Chinese.

But when we ask what authority is to be appealed to in order to settle such meaning or sense, and how we are to avoid ambiguity and obscurity: when we ask how we are always to be 'clear' for all hearers or readers alike under all circumstances: when we ask where we may obtain some training not only in the difficult art of conveying our own meaning, but also in that of interpreting the meaning of others: when further we inquire into the genesis of sign, symbol, mark, emblem, &c. and would learn how far their 'message' must always be ambiguous or may become more adequately representative and more accurately suggestive, then the only answers as yet obtainable are strangely meagre and inconsistent. And they can hardly be otherwise so long as no serious attention, still less study, is given to the important ideas which we vaguely and almost at random convey by 'sense,' 'meaning,' and allied terms, or to that process of 'interpretation' which might perhaps be held to include attention, discrimination, perception, interest, inference and judgment, but is certainly both distinct from, and as important as, any of these.

The question where the interpreting function begins: where any stimulus may be said to suggest, indicate or signalise

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somewhat other than itself, is already to some extent a question of Meaning,—of the *sense* in which we use the very word. In one sense, the first thing which the living organism has to do,—beginning even with the plant—is to interpret an excitation and thus to discriminate between the appeals *e.g.* of food and danger. The lack of this power is avenged by elimination. From this point of view, therefore, the problem which every root as well as the tentacle and even the protozoic surface may be said to solve is that of 'meaning,' which thus applies in unbroken gradation and in ever-rising scale of value, from the lowest moment of life to the highest moment of mind.

But 'meaning,' one of the most important of our conceptions and indeed that on which the value of all thought necessarily depends, strangely remains for us a virtually unstudied subject. We are content to suppose it vaguely equivalent to 'significance' or to ideas expressed by a long list of so-called synonyms, never used with any attempt to utilise the distinctions of idea which they may embody, and which inquiry might show to be of real value in disentangling the intricacies and avoiding the pitfalls of philosophic thought. For example, for the purposes of such inquiry some of the main lines of thought might be tentatively correlated with the meaning-terms which seem more especially to belong to them; and this would at least help us to understand that we are not to demand of any one what more properly belongs to another.

The following attempt at such a classification is of course only a suggestion of what is here intended (*i.e.* meant):—

Philology and Signification		Meaning (or Intent?)
Logic and Import		
Science and Sense		
Philosophy, Poetry, Religion	and Significance	

It is evident that the questions here opened are too wide to be adequately dealt with in an Article; but it may be possible briefly to suggest the kind of advantage which might accrue from the direction of attention to this subject.

Signification here represents the value of language itself: it seems naturally concerned with words and phrases, and is generally confined to them, although the numerous exceptions show that the distinction is not clearly recognised.

Import, on the other hand, introduces us to the idea of 'importance' and marks the intellectual character of the logical process. When we speak of the import of propositions, we are thinking of more than bare linguistic value: and we may find

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that to master such 'import' has a real 'importance' with reference to the subtle dangers of fallacy.

In coupling *sense* with physical science, three main current senses of the word should be borne in mind. There must certainly be some 'sense' both as meaning and as judgment in observation and experiment to give them any value whatever, as our use of 'the senseless' testifies, while the word is perhaps freer from any speculative taint than even 'meaning.' But in another 'sense,' Sense is the inevitable starting-point and ultimate test of scientific generalisation, and this suggests the question whether these divers senses of the word 'sense' are independent: whether the fact of the one word being used to convey what are now quite different ideas is merely accidental, or whether it points to a very close original connection between the ideas, if not to their actual identity. There seems at least a strong presumption in favour of the latter alternative: since the divergence of the senses of 'sense' has been a comparatively recent development and is thus possible to trace. And we have the authority of Dr Murray[1], as I believe of

[1] I am allowed to quote the following passages from a private letter from Dr Murray:—

"*Sensus* became in common Romanic *senso* (retained in Italian, Portuguese), which again became in French *sens*. From French we took *sens* into English, so spelling it at first; then, to prevent the final *s* being treated as a *z* as the plurals in *pens*, *hens*, *dens*, it was written *sence* (as in fence, hence, defence, offence, &c.), and finally, with the feeling of keeping it as like the Latin as possible, and thus 'showing the etymology,' *sense*.....Etymologically, *sensus* is the *u*-stem verbal substantive of *sentire*, to discern by the senses, to feel, see, hear, taste, or smell,—the general word expressing the operation of a sense-organ in acquainting us with external objects. We have no such general word in English, though *find*, and *feel*, have both been and still.....are extended beyond the faculty of touch, to include smell, and sometimes taste; *perceive* is probably the nearest English word. But *sentire* is also extended to the inner or mental perception, to perceive, be conscious, operate mentally, '*think*.' Hence, *sensus* meant primarily the operation of one of the bodily senses, the action or faculty of feeling, smelling, tasting, hearing, seeing, physical perception.

By the (partial) objectivizing of these faculties, it came to mean (2) what we call 'a sense,' one of the five senses; thus, 'quod neque oculis neque auribus neque ullo sensu percipi potest': what can be perceived neither by the eyes, nor by the ears, nor by any sense.

Then (3) it meant the act of conscious or mental perception, the perception of the mind or man himself, as effected by the instrumentality of a bodily sense (as when I feel a body in the dark, and thereby internally 'feel' or 'perceive' that some body is present), or of several bodily senses combined.

Then (4) the action of the mind or inner man generally, thought, feeling as to things known, opinion, view taken, &c.

Then (5) especially, the common or ordinary feeling or view of humanity in regard to any matter, or to matters in general, the 'common feeling or sense' of mankind as to what is true, proper, wise, or the con-

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philologists in general, for this view. If admitted, the fact is a pregnant one, as we may see when the subject can be treated more fully. Here we may perhaps note that the word seems to give us the link between the sensory, the sensible and the significant: there is apparently a real connection between the 'sense'—say of sight—in which we react to stimulus, and the 'sense' in which we speak or act.

Meanwhile the idea of *significance* stands on a different footing from the other meaning-terms. It will hardly be denied that it has or may have an implication both of importance and special interest or value which is completely lacking not only to 'signification,' but also to 'import,' in spite of the verbal connection of this last with 'importance;' and to 'sense' in spite of its wider application. We naturally lay stress on the significance of some fact or event like the French Revolution or the Chino-Japanese war, when we feel that its 'import,' its 'sense,'—even its 'meaning'—are quite inadequate to express its effect on our minds, while it would not occur to any one to speak of its 'signification.' It has 'significance,' it is 'significant,' because it indicates, implies, involves, (or may entail) great changes or momentous issues: because it demands serious attention and, it may be, decisive action: or because it must modify more or less profoundly our mental attitude towards the nations or races affected by it, and towards the problems called social.

This applies still more in the case of the great provinces of thought we call philosophy, poetry and religion, as the ideas belonging to these pre-eminently possess that kind of value best expressed by 'significance.' And if we say that philology or logic or physical science may also claim significance, it is in virtue of these 'knowledges' possessing some at least of the

trary. In this, an individual man may share more or less largely, and is said to have *more* or *less sense* accordingly: the justifiable assumption being that 'the great soul of mankind is just,' and that consequently the more a man is a man of sense, *i.e.* possessed of a large share of the common feeling, views, or sense of humanity, the more he is to be valued.

But (6) the feeling, view, or thought, that a man or men have in regard to anything, is expressible in words: the words convey the sense of the speaker: we gather his sense from his words, and naturally call it the sense of the words, *i.e.* the sense conveyed by the words (as we call the water conveyed by an aqueduct 'aqueduct water,' or a letter conveyed by a ship 'a ship letter'). Hence the meaning expressed by any sentence is its sense; and by very natural and necessary extension the meaning expressed by any single word is its sense. This was fully developed already by the late Latin grammarians and rhetoricians: thus Quintilian, 'verba duos sensus significantia'=(ambiguous) words expressing two *senses* or meanings. It is hardly popular or plebeian English yet: the man in the street would speak of the *sense* of a sentence or statement, but usually of the *meaning* of a single word. But he might in reference to a badly written word say he 'could make no sense of it.'"

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higher value which the word has come to imply: it is in virtue of their special emotional or moral interest either for all intelligent minds or for special groups of these.

Besides the sense-terms already instanced, there are of course many others. We have purport, reference, acceptation, bearing, indication, implication: we speak of expressing, symbolising, standing for, marking out, signalising, designating, suggesting, betokening, portending: words or phrases (and also gestures or actions) are intelligible, descriptive, definitive, emblematic: they are used to this 'effect,' to that 'purpose,' in this 'sense,' or in that 'intent.' All these and many others come in ordinary usage under the general term 'meaning': it remains to consider the claim of Meaning to cover more ground than Sense, and to stand therefore for all those conceptions which are expressed by the words commonly used as its synonyms. In the first place we must not forget that import (or purport) is really the secondary sense of the word Meaning: and that when we say we 'mean' to do this and that (*i.e.* we intend to do it) we are using it in its primary sense. It therefore becomes, like the various senses of 'sense,' an interesting subject for inquiry how the idea of intention has here given way to the idea of sense; because there certainly does not seem at first sight to be any close connection between the 'intention' which implies volition and looks to the future, and the 'meaning' which has no direct reference to either. On the other hand, when we say 'it is my intention to do this or that' we may use as an alternative 'it is my purpose to do it': and does not that bring us to a teleological value? If so, may the link be found in the idea of End? If we organise some expedition and charter means of transport and supplies, our meaning in all this is the furtherance of the object of such expedition: all our actions have reference to this end, which is the point and only 'sense' of our exertions.

We have thus linked Intention, Meaning and End. The fact that Meaning includes Intention and End seems to indicate that it is the most general term we have for the value of a sign, symbol, or mark. And yet it is precisely Meaning which has given rise to the denotative *v.* connotative controversy and which some logicians would deny to the 'proper name.' Of this it need only at present be remarked that if the latter view is to prevail, the logical use in narrowing the sense of 'meaning' will traverse the popular one, thus tending to create confusion unless we can bring another term into use in its place; while it would seem that all needed purpose would be served by admitting that the proper name, being a sign, is *literally* significant, *i.e.* has meaning, but is neither descriptive nor definable.

What exactly then is the point to which I am venturing to

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call the attention of scholars, thinkers, teachers? The very fact of the need and the lack of this attention makes a succinct answer which shall really be an answer, difficult if not even impossible. But we may provisionally express it as being, in the first place, the universal and strange neglect to master and teach the conditions of what is called, as vaguely in scientific as in philosophical writing, Sense, Meaning, Import, Significance, etc. with the conditions of its Interpretation, and in the second place the advantages, direct and indirect, present and future, of a systematic inquiry into the subject, and of its introduction from the first into all mental training.

This is emphatically more than a merely linguistic question, and it has more than even a logical or psychological value. But even if this were doubted, no one would deny that modes of expression tend both to reveal and to modify modes of thought; and this must be especially true in any attempt to make language express more perfectly, and thus enable thought to signify more and to interpret more. From this point of view we ought properly therefore to begin our quest from the linguistic stand-point, since a word *qua* word is a meaning-sign, and thus the so-called question of words is really a question of sense. It is not too much to say, though the fact seems little realised, that it is largely through the very instinct which prompts even the most futile 'verbal' dispute that language has gained that degree of efficiency which it already possesses. But it seems impossible here to enter satisfactorily upon this side of the question, which must thus wait for a more general recognition of the importance of the whole subject.

To take an instance of the increased power of discrimination which we might hope to gain if attention could be effectually roused on this subject, we may point to the many derivative forms of (bodily) sense, all of which are in fact used with consistency and clearness. We have *e.g.* the sensory, the sensible, the sensuous, the sensual, the sensitive; but all these have exclusive reference to the *feeling*-sense of sense[1]. Again, we

[1] It is difficult for the student of meaning-sense not to look with an envious eye at the wealth of idea which the organic-sense derivatives enable us to express with such precision. But for the increased confusion which a double usage would entail, we might gladly avail ourselves of the whole list, for they would immensely facilitate the discussion of questions of meaning-sense. At least however we might be allowed to coin a new derivative and speak of 'sensal' where we often now speak of 'verbal' questions, to the loss of a valuable distinction. For the use of 'verbal' ought surely to be confined to the spheres of philology or literary style, whereas 'sensal' would mark the difference between mere 'sense' (as meaning) and 'reality' *e.g.* when we speak of the 'real' question at issue as distinct from the 'verbal,' we constantly mean, distinct from the 'sensal.'

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have a different set of words for each special sense. We listen and hear, we glance, behold and stare, gaze and see; we touch and feel, etc. Now suppose that our sense-words were all used indifferently, and that we made no effort to remedy this, insisting when complaint was made that context determined quite well enough whether we meant sight or hearing or touch. In both these cases the loss of distinction would be a serious one. Yet in its meaning as significance, Sense is in fact credited with a number of synonyms, which we use simply at pleasure and only with reference to literary considerations instead of as valuable discriminatives, while no derivatives at all comparable with those from sense exist, from any word which stands for meaning. What is the consequence? That our speech is so far less significant than it might be: we fail to recognise what a wealth of significance lies in the idea of meaning itself, or how much depends upon the development of its applications. What after all is the moral basis of speech-life,—of articulate communion? Significance and lucidity. These are not merely accomplishments, they are ethically valuable. We owe it to our fellows to assimilate truth and to convey it to them unalloyed by needless rubbish of the senseless, the meaningless, the confused and the contradictory. It is our distinct duty to study the causes, to provide against the dangers, and to realise the true significance of ambiguity,—a point to which I shall hope to return later. But we find in serious discussion only too much witness to the absence of any cultivated sense either of the urgent need of conscientious, even scrupulous consistency in expression or of the importance of preserving the plasticity of language. Such a sense ought to be as delicate and as imperative as that of honour and honesty. We recognise that it is essential to good poetry that epithet and metaphor should be exquisitely chosen, should be delicately apposite, bringing us faithfully the picture or the emotion the poet wished for. But this is even more important when the result is to be not merely the highest delight but the most far-reaching and radical effect on knowledge. It is but seldom that a poet's metaphor or epithet can affect the whole outlook of generations to come, or will introduce permanent intellectual confusion. But when a philosophical or scientific writer uses metaphors or special epithets, they are intended to enforce some supposed truth or to convey fact often of crucial importance. It is therefore hardly far-fetched to appeal to the moral aspect of the question and to speak of developing a linguistic conscience. As it is, school-books abound with instances of the vagueness of our ideas of sense or meaning. We find, *e.g.* in an elementary text-book of Algebra: what is

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the meaning = what is indicated = what is denoted; and are indiscriminately told to interpret, translate and express, apparently only with the object of avoiding tautology.

One difficulty with which we are thus brought face to face is this: how are we to secure a word for the act or process which has been so much overlooked that we have not yet even acquired a means of expressing it? A given excitation suggests what is not itself and thus becomes a Sign and acquires Sense. What are we to call the act of ascribing, attributing, assigning to, bestowing or imposing upon, the sensation or impression or object, the sense—or meaning, which constitutes its 'sign-hood'? Is the process a 'referential' one? Though Signification as the 'signifying act' would bear the sense above proposed for it, it has the serious disadvantage of being already appropriated to another use. In the absence of anything better I would therefore venture here to speak of the act or process of *sensifying*. It is true that 'to sensify' must share the uncertainty of reference which belongs to sense itself. It might mean *e.g.* the attributing of our 'senses' to a tree or rock, which we suppose to hear, feel, see, etc. like ourselves. But as there is apparently no word which is free from all established associations, we may perhaps be allowed to use 'sensification' for that fundamental tendency to 'assign sense' and 'give meaning' without which Attention, Imitation and even Adaptation itself would either not exist or would be deprived of all their practical value. For the lowest forms of response to excitation or reaction to stimulus only become useful, only become means of physical and mental rise in scale, in so far as they attach some 'meaning' to that which affects them, and thus foster the development of the discriminating function.

It must however be obvious by now that what we are considering is the need not merely of substituting one word for another, not merely of more precise definition or even of more accurate or consistent usage in expression, but of a profound change in mental perspective which must affect every form of thought and may indeed in time add indefinitely to its capacity. If we get this increased power both of signifying and of apprehending or understanding Significance, we might hope for a general agreement as to the possibility of expanding the present limits of valid speculation. Thought might well attain the power to overpass these boundaries with the most indisputably profitable result. There would be less danger of wasting thought and time on plausible but fruitless inquiry.

Indeed one is almost tempted to ask whether the peremptory stress laid by modern science on the futility of

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attempts to overleap assumed mental barriers, may not be fully justified as in fact owing to an obscure instinctive sense that as yet thought is only reliable within these frontiers, as the lack of philosophical consensus seems to indicate; while on the other hand the tendency of the speculative mind to explore outlying regions, is in its turn due to an obscure impulse which is equally justified as really predictive. At present, it is true, such regions cannot be opened up for full colonization. Before the pioneer can hope to bring back the necessary information for the future colonist, he needs to be specially equipped for his task, and to have gone through a training which shall tend to heighten his natural powers of observation and inference. And we must not be misled by the popular notion that only a few of us can or may take up the vocation of a pioneer. As a matter of fact every one of us is in one sense a born explorer: our only choice is what world we will explore, our only doubt whether our exploration will be worth the trouble. From our earliest infancy we obey this law. And the idlest of us wonders: the stupidest of us stares: the most ignorant of us feels curiosity: while the thief actively explores his neighbour's pocket or breaks into the 'world' of his neighbour's house and plate-closet.

But the mental pioneer needs equipment, and it must be adequately provided in his training. The child's natural demand for the meaning of, as well as the reason for everything that he sees or that happens, is the best of all materials to work upon. He at least wants all that the richest vocabulary of meaning can give us. Just as every fresh acquirement of feeling-sense interests and excites him: just as he runs to us with the eager account of what he now finds he can detect by his eye or his ear or his finger: just as the exploring instinct develops in forms even sometimes trying to his elders, so it would be if the growth of the meaning-sense were stimulated and cultivated. And the thirst for exploring the inside of our watches might be diverted into the useful channel of exploring their 'meaning,'—or rather the different kinds of value they had, or the different senses in which they were valuable. Thus he would arrive at the *meaning* of one objection to their dissection, and everywhere would acquire fresh occasions for triumphant appeals to our admiration of his discoveries.

Beginning in the simplest and most graphic form: taking advantage of the child's sense of fun as well as of his endless store of interest and curiosity, it ought to be easy to make 'significs' or 'sensifics' the most attractive of studies. Following the physiological order, it would become the natural introduction to all other studies, while it would accompany

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them into their highest developments; clearing and illuminating everything it touched, giving us a self-acting consensus where as yet that seems most hopeless, and suggesting, if not providing, solutions to some of the most apparently insoluble of problems.

Here then, if I am right, would be the gain. The area of confusion, misunderstanding and dispute would be continually shrinking, and the area of really significant expression and intelligent assent constantly expanding, the limits of consensus enlarging with it. The adaptation of language to growing complexity of experience and to continually developing need would become, like that of the organism, more and more adequate: while correspondence—or at least mutual recognition—in usage, would become compatible with endless variety in application and implication: a variety all the more possible because we had at last begun to realise in earnest the lesson which in one form begins with life and in another ends only with experience,—the lesson of Interpretation.

In his *Essentials of Logic*—lectures expressly intended for the elementary student—Mr Bosanquet complains (p. 99) that the commonest mistakes in the work of beginners within his experience as a teacher "consist in failure to interpret rightly the sentences given for analysis." A much wider bearing, it seems to me, might be given to this remark. It surely applies to the whole field of mental activity. But can we wonder at any kind of failure to interpret, when we realise that the unhappy 'beginner' has never, unless incidentally or indirectly, been trained to interpret at all, or even to understand clearly what interpretation—as distinguished *e.g.* from judgment or inference or bare perception—really is?

Various objections may here suggest themselves. The principal ones may perhaps be summed up as (1) that there is no need for such a study as we are pleading for, since the subject is already dealt with in various connections and is implied in all sound educational methods: and (2) that its introduction would be impossible, and even if not impossible would be undesirable, as tending to foster pedantry and shackle thought.

The answer to the first of these objections is of course largely a matter of evidence, and of inference from admitted facts. The unexpected and startling conclusions to which a careful investigation of the present state of things has led me, require, I am well aware, the most irrefragable witness to sustain them. Before attempting to deal with this evidence even in the too brief form alone possible within our present limits—and thus at least to indicate the answer required—I

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would lay stress upon two points: first, that the ablest of thinkers, speakers and writers is now at the mercy of students, hearers, and readers, who have never been definitely trained to be significant or lucid or interpretative, and who are therefore liable to read their own confusion of mind on the subject of meaning into the clearest exposition: and, secondly, that where inconsistency or ambiguity may seem to occur even in first-rate writing, it goes to prove that the highest and most thoroughly trained ability does not escape the disastrous effects of comparative indifference to questions of meaning from which all alike inevitably suffer, and for which I am venturing to bespeak special attention.

Bearing this in mind, I may perhaps be allowed to bring forward a few instances taken from logical and psychological sources tending to show how great is the need of such special attention and how little is yet given to it except in an incidental or fragmentary way: although indications of a growing impatience of current confusions and a growing sense of their danger are not wanting.

In the case of the logical use of 'sense' or 'meaning,' etc. it is no doubt necessary to draw a distinction between the technical terms of logic and those which it borrows from ordinary language. It may be said that when the formal logician employs technical terms like intension, connotation, comprehension, extension, denotation, he is bound to give a careful and precise analysis of the sense in which he uses these terms; whereas meaning, sense, etc. not being used as technical terms, need neither be formally differentiated nor made strictly synonymous, since they must always be interpreted by their context. But in the first place, as Dr Keynes and others impress upon us, logic takes no cognizance of context; and in the second I would myself earnestly deprecate either the sacrifice of valuable distinctions by making these and allied terms "strictly synonymous," or such a differentiation of their value as would diminish necessary elasticity, or preclude further modification in their use. Words like premiss, conclusion, postulate, equation, proposition: like real, verbal, positive, negative, relative, simple, complex, are borrowed from ordinary discourse, and are as a rule used in Logic with almost punctilious consistency. It is only when we get to the meaning-terms that we are left to gather as best we may their valid use and application, not merely in Formal Logic technically so called, but also in the discussion of those wider generalizations of the nature and conditions of valid thinking which lead on from Logic proper to Epistemology. As yet we are often left to gauge their value and their scope by a context which itself is often necessarily a severe tax on the

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student's attention and power of 'interpretation,' just because of the closeness of the reasoning employed and the dryness and abstraction of the subject.

But there are signs that this will not much longer be the case.

In Mr W. E. Johnson's Notice in *Mind*[1] of Dr Keynes's 3rd edition of his *Formal Logic* he cites a number of additions and even special chapters as pointing to "the growing importance of questions dealing with what is called the import of propositions in view of recent controversies" (p. 240).

Technical distinctions in this, already emphasised, are more minutely applied. A fresh term, Exemplification, is introduced, leading to interesting results and throwing needed light on "the mutual relations between extension and intension" (p. 242). Mr Johnson points out that controversies connected with the "so-called import of propositions" are largely due to "Confusion between three distinct meanings of the term import. These may be called the *formulation*, the *interpretation* and the *fundamental analysis* of propositions."

The 'interpretation' here is what concerns us most; and by this is meant "the assignment of the precise degree and amount of significance to be attached to it." This is a definite step gained: but we still want to be clear whether, to the logician, significance = signification; or whether the difference of termination may not indicate a distinction of logical as well as general value. As "Ordinary language is often ambiguous," there is "need of *interpreting*" (italics Mr Johnson's) "any given form of words. Moreover in the process of reducing propositions to new forms, the logician may unwittingly put more or less of significance into the proposition than it originally bore" (p. 243).

But here and in the following passages 'significance' is used where there is none of that element which 'significance' can alone suggest, and where it would seem that some other word would give adequately and in fact more accurately the 'sense' intended. Might it not conduce to clearness if the use of 'significance' were discontinued in Formal Logic? However, the main point is that distinct stress is here laid, for the first time, on questions of interpretation, as well as of formulation and fundamental analysis; and these especially with reference to Import itself. Developments may thus be hopefully looked for.

In Dr Keynes's own work (3rd edition) I will venture to take one illustration of the point now under consideration.

[1] April, 1895.

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In the exercises at the end of Chapter VII. (Part II.) the student is directed to "assign precisely the meaning of" an assertion, and to "examine carefully the meaning to be attached to" a denial (p. 210). But he may surely ask which of the many interpretations of 'meaning' he is to adopt here. To refer only to pp. 160—5, we may choose for 'meaning' any of the various 'senses,' intention, signification, connotation, application, import, purport, implication. Of a certain inference also it is said (p. 164) that "this would mean" (*i.e.* involve) the introduction of certain symbols. Ordinary logical doctrine, Dr Keynes reminds us, "should not depart more than can be helped from the forms of ordinary speech" (p. 165). But how confused these often are is illustrated by this very sentence; as the 'meaning' obviously is "more than *cannot* be *hindered*" (or strictly, 'avoided'). "Make no more noise than you can help" is of course "make no more noise than you *cannot avoid making*." Such an instance forcibly illustrates Dr Keynes's contention that "it is obviously of importance to the logician to clear up all ambiguities and ellipses of language" (p. 168).

In a Manual for use by students, Mr Welton tells us that

> "Generalisation extends the application of words and so lessens their fixed meaning, and thus allows the same word to have different senses" (p. 13). A word may thus "call up very different ideas in different minds, or in the same mind at different times. Such terms are particularly unsuited to scientific discussion, and when they are used in it they invariably lead to misunderstanding and dispute" (p. 14).

Is 'idea' here a synonym of sense? Are application and sense convertible terms? Are not these words, *thus left undefined*, themselves "unsuited to scientific discussion" as tending to confusion? He takes the view that "An individual name may be a mere verbal sign devoid of meaning.....Proper names...can only *suggest*, not imply, and are therefore in themselves *unmeaning*" (pp. 62—3). (Italics my own.)

This distinction, we are assured, is of fundamental importance, and, through overlooking it, Jevons, Bradley and other logicians take the opposite view. But how comes it that logicians of such acumen and eminence 'overlook' a point of such importance? What hinders consensus? And what is the student to gather from all this? For instance, is he to conclude that the suggestive may be the unmeaning?

Dr Venn[1] writes with reference to convertible terms, "Even if we can find two which strictly mean the same thing, that is, which apply to exactly the same object or class, there are sure

[1] *Empirical Logic.*

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to be differences amongst the many associations which cluster about them and blend with the true meaning" (p. 43).

Here to *mean* and to *apply* are used as synonymous. But presently we read of "Two aspects under which a name may be viewed. These are respectively its meaning and its range of application.....characteristics which it is meant to imply and objects to which it is found to apply....The more meaning we insist upon putting into a name the fewer.....the objects to which that name will be appropriate; the less the meaning contained, the wider will be the range of application of the name" (p. 174).

Is this "logical consistency"? How can we hope for it in the case of terms like 'meaning' until the ideas which they stand for have been carefully analysed? At present they seem marked out for loose usage even among the most accurate of writers.

But if, with Prof. Adamson, we are to admit that we cannot yet define even the exact status or province of Logic itself, since it is sometimes treated as an abstract science, sometimes as a subordinate branch of one, sometimes as a nondescript receptacle for formulations of method, it may be unreasonable to expect much from the present point of view until the various meanings of the term Logic are more clearly differentiated and more universally accepted. At present, as he says,

"The diversity in mode of treatment is so great that it would be impossible to select by comparison and criticism a certain body of theorems and methods, and assign to them the title of logic.....In tone, in method, in aim, in fundamental principles, in extent of field, they diverge so widely as to appear, not so many different expositions of the same science, but so many different sciences. In short, looking to the chaotic state of logical text-books at the present time, one would be inclined to say that there does not exist anywhere a recognised, currently received body of speculations to which the title logic can be unambiguously assigned, and that we must therefore resign the hope of attaining by any empirical consideration of the received doctrine a precise determination of the nature and limits of logical theory[1]."

If we can gain a classification of meaning-sense itself, not merely as wide or narrow, direct or indirect, but as applicative, implicative, acceptative, indicative, &c., it must in some degree help towards more clearly determining, discriminating and relating the senses in which we may legitimately apply an all-important term like Logic: and would thus enable the true distinctions within such a concept to be definitely and consistently utilised, while fallacious or misleading uses would tend to expose and condemn themselves.

[1] "Logic" (*Encyc. Brit.*).

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III.—LOCKE'S THEORY OF MATHEMATICAL KNOWLEDGE AND OF A POSSIBLE SCIENCE OF ETHICS.

By James Gibson.

The aim of the following paper is purely historical. I do not propose either to criticise the explanation which Locke gives of mathematical knowledge, or to dwell upon the obvious futility of the analogy which he seeks to establish between the subject-matters and methods of Mathematics and Ethics; but to endeavour to ascertain what Locke's theory on the subject really was, and the relation in which his theory stands to the previous development of thought in England. This purpose will, I think, be most readily attained if we consider first the theory of the *Essay*. Having ascertained the nature of Locke's own theory, we shall be better able to appreciate the significance of its historical antecedents than we should be if we followed the historical order.

Beginning then with the theory of Locke, we must notice first the extent to which his general conception of knowledge is dominated by the mathematical sciences which had made such enormous advance in his age. Those mathematical demonstrations, which, as he says, "like diamonds are hard as well as clear," excited his intense admiration, and formed the standard by which he tested the other departments of science and found them wanting. His theory of knowledge is as essentially a mathematical one as that of Descartes. Indeed, in some respects, his general theory is more deserving of the term mathematical, and his account of our knowledge of mathematics is superior to that of the professed mathematician. Descartes was so impressed by the universality of application of the analytical method, that he tended to represent mathematical demonstrations as entirely a matter of logic, (not, it is true, of the purely analytical logic of the Aristotelians) and to overlook the necessity of that appeal to intuition which lies behind every proposition in mathematics. Now, though the functions of intuition and thought are as little distinguished by Locke as by

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Descartes, the *rôle* played by intuition in his theory is in reality much larger. The geometry of Euclid, with its frequent appeal to the ideal superposition of one figure upon another, comprised all the mathematics with which he was thoroughly familiar, and coloured his whole view of mathematical and other knowledge. For he failed to observe that this method of superposition is not applicable beyond the region of geometry. Accordingly, the "juxtaposition" of ideas and "application" of ideas to one another, become terms of constant occurrence in his account of our knowledge of the relations of ideas, which yet, he holds, is not necessarily confined to mathematics; and where this juxtaposition and application cannot be immediately made, we are told to look for "a common measure" of our ideas. The whole process of reasoning is resolved into the search for, and employment of, such common measures. Thus, we are told, "the principal act of ratiocination is the finding the agreement or disagreement of two ideas one with another by the intervention of a third: as a man by a yard finds two houses to be of the same length, which could not be brought together to measure their equality of juxtaposition[1]."

Locke's general conception of knowledge being thus governed by mathematical analogies, we are prepared to find him deny that there is anything in the conception of Quantity, which renders it in any peculiar way susceptible of scientific treatment. The unique position of mathematical knowledge was however apparent to him, and when he comes to consider why it is that Mathematics is the only branch of knowledge which has been developed into a truly scientific form, and in particular why it has so far outstripped what he regards as a possible demonstrative science of Ethics, its special characteristics do to some extent force themselves upon his attention. It must be remembered, however, that the passage we are about to examine is not intended by him to limit that demonstrative knowledge, which he always describes by geometrical analogies, to the region of mathematics; but is put forward as an explanation why this limitation has been erroneously thought to exist.

"The reason why it" (*i.e.* demonstration) "has been generally sought for and supposed to be only in those," (*i.e.* the mathematical sciences) "I imagine has been not only the general usefulness of those sciences, but because, in comparing their equality or excess, the modes of numbers have every the least difference very clear and perceivable: and though in extension every the least excess is not so perceptible, yet the mind has

[1] Bk IV. Ch. xvii. § 18.

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found out ways to examine and discover demonstratively the just equality of two angles, or extensions, or figures; and both of these, *i.e.* numbers and figures, can be set down by visible and lasting marks wherein the ideas under consideration are perfectly determined; which for the most part they are not, where they are marked only by names and words[1]."

The demonstrative character of the science of number is here attributed primarily to the discreteness of its subject-matter, in consequence of which every one of the modes of number is easily distinguishable from every other[2]. With regard to the elementary propositions of arithmetic we obtain no information beyond the bare assertion that the relations expressed by them are immediately "perceived." Like Kant, Locke is inclined to pass too lightly over the case of Arithmetic. This tendency is still more apparent when we ask what part is played in arithmetic by those "visible and lasting marks" of which he speaks in the concluding clause of the sentence. The only marks which could "perfectly determine" our ideas of number would be the concrete representations of the numbers by so many strokes or points; yet, from his subsequent references to the subject, the conventional numerical characters appear to be all that is really in his mind.

With regard to the "ways" which the mind has found out for proving equality in extension there is a little difficulty. As the passage stands, we seem to have only a repetition of the fact to be explained, *viz.*, that in geometry "ways" have been discovered which enable us to demonstrate the connections of the ideas concerned, while in the other sciences which are held to be equally capable of demonstration no such "ways" have yet been found. By these "ways," however, we must suppose him to mean (principally at least, for the services of Algebra in the new analytic geometry were also in his mind), the method of ideal superposition. He refers to them immediately afterwards as "ways to measure"; but to suppose that the empirical measurements of actual figures was what he intended, would be inconsistent with his whole view of the mathematical sciences.

The possibility of representing our geometrical ideas in "visible and lasting marks," is that which seems to bring him nearest to the explicit recognition of the intuitive character of

[1] Bk IV. Ch. ii. § 10.

[2] Cf. Bk II. Ch. xvi. § 3. "The simple modes of number are of all other the most distinct; every the least variation which is an unit, making each combination as clearly different from that which approacheth nearest to it, as the most remote; two being as distinct from one as two hundred.... This is not so in other simple modes."

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the science; and from the manner in which he treats these marks we shall best learn to what extent he was conscious of the distinction. What, then, were the functions attributed by Locke to the diagram in geometry? Further on in the *Essay* he repeats and expands his view on the subject. "That which, in this respect, has given the advantage to the ideas of quantity, and made them thought more capable of certainty and demonstration, is, first, that they can be set down and represented by sensible marks, which have a greater and nearer correspondence with them than any words or sounds whatsoever. Diagrams drawn on paper are copies of ideas in the mind, and not liable to the uncertainty which words carry in their signification. An angle, circle, or square, drawn in lines, lies open to the view, and cannot be mistaken: it remains unchangeable, and may at leisure be considered and examined, and the demonstration be revised, and all the parts of it may be gone over more than once, without any danger of the least change in the ideas[1]." From this it would appear that the only advantage which he conceived geometry to possess, from the possibility of the sensible intuition of its ideas in space, is that the diagram keeps the same idea before the mind, and prevents misunderstanding in the communication of geometrical demonstrations. As he tells us elsewhere, the use of the diagram to the geometrician is "steadily to suggest to his mind those several ideas he would make use of in that demonstration[2]." In a word, it is not the intuitive character of the diagram, but its objective constancy upon which he lays stress. The mark is "visible" to all and "lasting." The diagram is only a superior substitute for the name, or arbitrary sign, and it is only "for the most part" that our ideas are not "perfectly determined" when they are "marked only by names and words[3]."

Our mathematical knowledge in fact still remains merged for Locke in our general knowledge of the relations of ideas. In the figure employed by the geometrician in his demonstrations, which, while in its existence particular, is yet thought by him as universal, intuition and thought, the particular and the universal are found united; and this is taken by Locke as his general type of knowledge. Accordingly Locke holds that this species of knowledge by means of the intuition of relations between ideas is not confined to the region of mathematics. We can have this mathematical certainty in other subjects besides mathematics. Take, for instance, the principle of causality. "Everything that has a beginning must have a cause, is a true principle of reason, or a proposition certainly

[1] Bk IV. Ch. iii. § 19.
[2] First Letter to the Bishop of Worcester.
[3] Bk IV. Ch. ii. § 10.

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true; which we come to know by the same way, *i.e.* by contemplating our ideas, and perceiving that the idea of beginning to be, is necessarily connected with the idea of some operation; and the idea of operation with the idea of something operating, which we call a cause; and so the beginning to be, is perceived to agree with the idea of a cause, as is expressed in the proposition[1]." And similarly, though he cannot discover what it is in itself, he never has any hesitation in affirming that phenomena imply some unknown basis as their support, because "we cannot conceive how modes or accidents can subsist by themselves[2]."

But when we seek to proceed beyond these general principles to their application, a great contrast presents itself between our physical and mathematical knowledge, into the meaning of which we must now enquire. The preeminence of mathematics, according to Locke, rests upon its purely ideal character, which seems at first sight to relegate it to the region of those "fictions at pleasure" which have no foothold in reality. Our mathematical ideas are formed "without patterns or reference to any real existence[3]," yet the knowledge they furnish is "real." How, now, does Locke reconcile these positions?

In the first place, we may observe that the objective reality of space itself is always regarded by Locke as guaranteed by the "simplicity" of the idea, which consequently we cannot have made for ourselves. The geometer, however, is not concerned with space itself as a whole, but with the properties of figures in space. And these figures are not merely ideas but ideals. He proves propositions, for instance, which are only true of the perfect rectangle or the perfect circle, and yet, "it is possible he never found either of these existing mathematically, *i.e.*, precisely true, in his life[4]." The knowledge thus gained, Locke tells us, is "true and certain even of real things existing: because real things are no farther concerned, nor intended to be meant by any such propositions, than as things really agree to those archetypes in his mind[5]." But, it may be asked, could we not justify on similar grounds the reality of any "insignificant chimaeras of the brain," or the dreams of a Ghost-seer? This is an objection which Locke himself endeavours to meet. Though we need not wait to find an actually existing perfect circle, before pronouncing our geometrical knowledge of the circle "real," we must, he holds, be able to show its real possibility. It is necessary for the reality of the science that our mathematical ideas should be

[1] First Letter to the Bishop of Worcester. [2] *Loc. cit.*
[3] Bk II. Ch. v. § 3. [4] Bk IV. Ch. iv. § 6.
[5] Bk IV. Ch. iv. § 6.

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"so framed that there be a possibility of existing conformable to them[1]." Elsewhere we read that propositions only "contain real truth when these signs (*i.e.* words) are joined as our ideas agree; and when our ideas are such as we know are capable of having an existence in Nature[2]."

The question then arises, how can we show the real possibility of these ideas apart from experience, and know that the workmanship of the mind is capable of a real existence? Locke's answer would seem to be that we can do so when our knowledge of the idea and its implications is perfect; when, so to say, the idea is quite transparent to intelligence. Our ideas of geometrical figures, he holds, are so complete and self-contained that we can be sure that when there is no inconsistency in the idea there can be none in reality. We know a circle or triangle through and through without any perplexing remainder. The mind, he tells us, "does not conceive that any understanding hath, or can have, a more complete or perfect idea of that thing it signifies by the word 'triangle,' supposing it to exist, than itself has in that complex idea of three sides and three angles; in which is contained all that is or can be essential to it, or necessary to complete it, wherever or however it exists[3]." And the presupposition which underlies Locke's theory is that when our ideas are thus perfect and complete, the absence of inconsistency in the idea carries with it of necessity the absence of inconsistency in reality. Without this rationalistic assumption his whole argument would fall to pieces.

We must, however, examine more closely the opposition which Locke discovers between the subject-matters of Mathematics and the physical sciences, as a consequence of which we are able to attain to a knowledge of the former which is at once universal and real, while in respect of the latter our assertions can only become universal at the expense of becoming verbal or trifling. The implications of his conception of mathematical knowledge are most clearly revealed in the difficulties which he finds in the way of a scientific knowledge of substances. For this purpose it will be necessary to consider briefly the meaning which the terms "real" and "reality" have for Locke, about which there is, I think, a good deal of current misconception. At the back of Locke's thought there lies a metaphysical theory, never explicitly enunciated, indeed, because to formulate metaphysical theories was not the purpose of the *Essay*, but assumed throughout as something beyond questioning. According to this theory, reality consists of a number of self-subsisting entities or substances. Everything

[1] Bk II. Ch. xxx. § 4.
[2] Bk IV. Ch. v. § 8.
[3] Bk II. Ch. xxxi. § 3.

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has a "real constitution" of its own, which lies "within itself, without any relation to any thing without it[1]," and this strictly private constitution is what it really is. It is for this reason that Locke declares that relations are "not contained in the existence of things" but are "something extraneous and superinduced." They are not contained "in things as they are in themselves[2]," but depend upon a comparison of things made by the mind. It is because they are "superinduced to the substance[3]," not, as Green[4] supposed, because they are an addition to the simple idea which cannot be represented in momentary consciousness, that they are in a sense regarded as unreal.

Needless to say, as soon as reality is brought into contact with thought, this metaphysical theory and the terms in which it is expressed break down, and Locke proceeds to consider as "real," constituents of knowledge for which no defence could be made at the bar of his metaphysical theory. An idea is held to be real when it is not a mere "fiction of the mind," but possesses some "foundation in Nature," "correspondence," or "conformity" with Nature. As a consequence, however, of his metaphysical theory of what constitutes reality, there results a difference in the criteria by which the reality of different kinds of ideas is to be determined. Seeing that substances are the constituents of reality, our ideas of substances are held to carry an existential implication, which is not present in other ideas. As ideas of substances they refer to archetypes existing without us, of which they are "supposed copies," and are unreal if these archetypes have never existed in Nature; whereas of mixed modes and relations, which confessedly lack metaphysical reality, our ideas are regarded as real if they have applicability to the real world, or if they are such as are merely capable of exemplification in Nature. "When we speak of justice or gratitude, we frame to ourselves no imagination of anything existing," (or, we may add, in the metaphysical sense here intended, capable of existing) "which we would conceive; but our thoughts terminate in the abstract ideas of those virtues, and look no farther; as they do when we speak of a horse or iron, whose specific ideas we consider not as barely in the mind, but as in things themselves, which afford the original pattern of those ideas[5]." The contrast between the metaphysical reality which mixed modes and relations cannot possess, and the epistemological reality of which their ideas are susceptible, is clearly indicated in the following passage. "Mixed modes and relations having no other reality but what they have in the minds of

[1] Bk III. Ch. vi. § 6.
[2] Bk II. Ch. xxv. § 1.
[3] Bk II. Ch. xxv. § 4.
[4] Introduction to Hume, § 32.
[5] Bk III. Ch. v. § 12.

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men, there is nothing more required to those kinds of ideas to make them real but that they be so framed that there is a possibility of existing conformable to them[1]." On the other hand, we are told that even could we be assured of the possibility of the existence of something corresponding to an idea of substance, this would not be sufficient to justify us in regarding the idea as more than imaginary. Of centaurs, and similar ideas of substances formed by the mind itself, we read, "Whether such substances as these can possibly exist or no, it is probable we do not know: but *be that as it will*, these ideas of substances being made conformable to no pattern existing that we know, and consisting of such collections of ideas as no substance ever showed us united together, they ought to pass with us for barely imaginary[2]."

We see then that Locke has a different standard by which to determine the reality of our ideas of substances from that which he applies to our ideas of mixed modes, and that this difference of epistemological criteria results from his metaphysical conception of reality as made up of so many independent and self-subsistent entities. Now, since for the reality of knowledge it is necessary that there should be "a conformity between our ideas and the reality of things[3]," or that "our ideas should answer their archetypes[4]," the natural conclusion would seem to be, that for a real knowledge of substances, the actual existence of the corresponding entities and the derivation of our ideas from them are essential conditions. But when Locke comes to treat, in the fourth Book, not of the reality of ideas considered in abstraction from each other, but of the reality of those relations between ideas which constitute knowledge, a different line of thought suggests itself to him. It is not the reference to actual existence contained in our ideas of Substances, but a deficiency in the ideas themselves upon which he now dwells. We are explicitly told in one place that for a knowledge of the properties of substances their actual existence *in rerum Natura* is not required. "Had we such ideas of substances as to know what constitutions produce those sensible qualities we find in them, and how those qualities flowed from thence, we could, by the specific ideas of their real essences in our own minds, more certainly find out their properties and discover what qualities they had or not, than we can now by our senses: and *to know the properties of gold, it would be no more necessary that gold should exist*, or that we should make experiments upon it, *than it is necessary for the knowing the properties of a triangle, that a triangle should exist*

[1] Bk II. Ch. xxx. § 4.
[2] Bk II. Ch. xxx. § 5.
[3] Bk IV. Ch. iv. § 3.
[4] Bk IV. Ch. iv. § 8.

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in any matter: the idea in our minds would serve for the one as well as for the other[1]." Further, we even read, in direct contradiction of what we saw to be the teaching of Bk. II., that the necessity for an empirical derivation of our ideas of substances results from our inability to determine their real possibility *a priori*. Locke begins indeed in the old strain. "Our ideas of substances, being supposed copies and referred to archetypes without us, must still be taken from something that does or has existed; they must not consist of ideas put together at the pleasure of our thoughts though we can perceive no inconsistence in such a combination." But now comes the change of position. "The reason whereof is, because we knowing not what real constitution it is of substances whereon our simple ideas depend, and which really is the cause of the strict union of some of them one with another, and the exclusion of others; there are very few of them that we can be sure are or are not inconsistent in Nature, any farther than experience and sensible observation reach[2]." The truth would seem to be that when treating of knowledge his metaphysical theory receded further in his mind than when dealing with mere ideas. Regarded as constituents of knowledge, our ideas of substances do not possess that unique character which the presuppositions of his Metaphysics had led him to attribute to them. Locke is thus led at least to suggest as a criterion for the knowledge of substances as well as of modes and relations, the principle of complete intelligibility, forgetful of those unknown and unknowable things-in-themselves, whose isolated self-subsistence constituted for him the true nature of reality, and by reference to which the derivative reality possessed by ideas and knowledge was to be determined. He nowhere, however, shows any consciousness of the nature of this admission, or of its inconsistency with his general theory.

It remains for us to consider what are the characteristics which Locke discovers in our ideas of substances, which prevent these from becoming the subject-matter of scientific knowledge. Why cannot we know *a priori* the real possibility of ideas of substances as well as of ideas of modes and relations? To begin with, our ideas of substances are largely made up of simple ideas of one sense, and these are peculiarly insusceptible of those intuitive relations which constitute knowledge. We have seen that Locke rested the demonstrative character of arithmetic upon the discreteness of number and the consequent distinctness of its ideas. This feature of the science of number is not fully shared by any other department of knowledge. "In other simple modes.....it is not so easy, nor perhaps possible, for us

[1] Bk IV. Ch. vi. § 11. [2] Bk IV. Ch. iv. § 12.

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to distinguish betwixt two approaching ideas, which yet are really different. For who will undertake to find a difference between the white of this paper and the white of the next degree to it? or can form distinct ideas of every the least excess in extension[1]?" In Geometry, however, we can by means of the method of superposition find "ways to measure" the exact equality of lines, angles and surfaces. In comparison with Arithmetic, therefore, Geometry does not labour under any inferiority of certainty or exactness, but only of generality and precision of application to the real. The most we can say in the case is that "demonstrations in numbers, if they are not more evident and exact than in extension, yet they are more general in their use, and more determinate in their application[2]." But in those other simple ideas which differ only qualitatively and intensively we can neither immediately perceive, nor by any artifice measure their exact differences. "In other simple ideas, whose modes and differences are made and counted by degrees, and not quantity, we have not so nice and accurate a distinction of their differences as to perceive or find ways to measure their just equality or the least differences[3]." The continua of these ideas of secondary qualities are not therefore in themselves capable of measurement or of direct scientific treatment, and the only possibility of reducing them to a scientific form lies in their resolution into those insensible primary qualities on which they depend; and this resolution we cannot perform. "Being appearances of sensations produced in us by the size, figure, number, and motion of minute corpuscles singly insensible, their different degrees also depend upon the variation of some or all of those causes; which, since it cannot be observed by us in particles of matter whereof each is too subtle to be perceived, it is impossible for us to have any exact measures of the different degrees of these simple ideas[4]."

The case is no better when we proceed to consider these ideas in the relations in which they stand to each other. We can of course affirm each of itself, and deny it of every other[5], but we cannot detect between our ideas of secondary qualities any of those special intuitive relations in which "positive knowledge" consists. They form, indeed, the principal components of our complex ideas of substances, in which we conceive

[1] Bk II. Ch. xvi. § 3.
[2] Bk II. Ch. xvi. § 4.
[3] Bk IV. Ch. ii. § 11.
[4] *loc. cit.*
[5] This is all that can really be meant when we are told that "where the difference is so great as to produce in the mind clearly distinct ideas, whose difference can be perfectly retained there, these ideas of colour, as we see in different kinds as blue and red, are as capable of demonstration as ideas of number and extension." Bk. IV. Ch. ii. § 13.

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several of them as united in the same subject; but nevertheless we cannot by the mere contemplation of these ideas perceive any necessary connections of coexistence between them, or even pronounce that any given combination of them has so much as a possible existence in nature. We can be certain, it is true, that "no subject can have two smells or two colours at the same time[1]"; but between a smell and a colour we can perceive no incompatibility. "I imagine, amongst all the secondary qualities of substances and the powers relating to them, there cannot any two be named whose necessary coexistence, or repugnance to coexist, can certainly be known, unless in those of the same sense, which necessarily exclude one another[2]." Considered in themselves these ideas of different senses seem quite indifferent to each other. We cannot, however, from this infer the real possibility of their coexistence in the same subject. Though thus seemingly independent of each other, they are all in Locke's view dependent ideas. Owing to their variability, they cannot appertain to the real constitution of anything, which is fixed and permanent, but are merely incidental effects produced in us by the spacial relations of the minute particles of matter, to which, Locke assumes, such an objective existence may be ascribed. They are thus dependent for their existence on certain unknown "primary" qualities; and between the ideas of these unknown qualities there may be an inconsistency, which would render the coexistence of the corresponding secondary qualities impossible. Until then we know those "primary qualities of the insensible parts of matter" from which they spring, and the manner in which they spring from them, we cannot *a priori* be certain that any given combination of secondary qualities has even a possible existence in nature. As long as these conditions remain unrealised, we can only know that there is no incompatibility of existence by actually experiencing the coexistence in question.

The dependence of secondary upon primary qualities not only prevents us from forming *a priori* complex ideas of their combinations, but also opens out the only possibility of a scientific knowledge of nature which Locke is able to conceive. This hypothetical science would not afford a knowledge of coexistences of secondary qualities, but of the mechanical operations of one body upon another. "That the size, figure, and motion of one body should cause a change in the size, figure, and motion of another body, is not," Locke thinks, "beyond our conception. The separation of the parts of one body upon the intrusion of another, and the change from

[1] Bk. iv. Ch. iii. § 15. [2] Bk. iv. Ch vi. § 10.

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rest to motion upon impulse; these, and the like, seem to us to have some connection one with another. And if we knew these primary qualities of bodies, we might have reason to hope we might be able to know a great deal more of these operations of them one upon another[1]." At times he speaks more confidently. "I doubt not but if we could discover the figure, size, texture and motion of the minute constituent parts of two bodies, we should know without trial several of their operations one upon another, as we do now the properties of a square or a triangle[2]." And as examples of such operations he instances the effects produced upon the human constitution by rhubarb, hemlock, and opium. But even if our faculties of sense were improved or aided to the extent necessary to render such knowledge possible, there would still remain "another and more incurable part of ignorance[3]." For we could never hope to connect these mechanical explanations of the processes of nature with the secondary qualities by which they are revealed to our sensitive consciousness. "We are so far from knowing what figure, size, or motion of parts produce a yellow colour, a sweet taste, or a sharp sound, that we can by no means conceive how any size, figure, or motion of any particles can possibly produce in us the idea of any colour, taste, or sound whatsoever; there is no conceivable connection between the one and the other[4]." The immediacy of mere sensation, therefore, must always constitute a limit to our scientific knowledge.

These "simple ideas of one sense" which had held such a prominent place in Locke's account of the origin of knowledge, fall then completely into the background in his examination of knowledge itself. Since in this case we cannot "distinguish betwixt two approaching ideas, which are really different," they lack that distinctness which is held to be essential to every idea, and to that extent cease to be strictly ideas; the closest scrutiny fails to detect in them any of those special intuitive relations by means of which other ideas are formed into systems of knowledge; and, finally, in them we discover an insurmountable barrier in the way of a perfectly intelligible acquaintance with Nature in its manifestations to our consciousness.

Ethics is the subject which Locke specially singles out as capable of being raised to the form of a demonstrative science by means of our present faculties. It is mainly concerned, like Mathematics, with ideas of mixed modes and relations, in which there is no implication of actual existence. Moreover, unlike our present ideas of substances when their existential implication is dropped out of view, our ethical conceptions in Locke's

[1] Bk IV. Ch. iii. § 13.
[2] Bk IV. Ch. iii. § 25.
[3] Bk IV. Ch. iii. § 12.
[4] Bk IV. Ch. iii. § 13.

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opinion admit of those special intuitive connections in which knowledge consists.

It must be owned that in the attempt contained in the *Essay* to exhibit demonstrably certain propositions in Ethics Locke did not meet with much success. Property being defined as "a right to anything," and injustice as "the invasion or violation of that right," it no doubt follows that "where there is no property there is no injustice[1]." But the assertion is not exactly a light-bearing one, nor is it easy to see how it can escape the condemnation of "trifling." And so of his other example, "No Government allows absolute liberty[2]"; where Government is defined as "the establishment of society upon certain rules or laws which require conformity to them," and absolute liberty as "for anyone to do whatever he pleases." Indeed, Locke himself seems to have come to feel that in his first edition he had spoken somewhat too confidently of the extension of demonstrability beyond Mathematics. For in place of the assertion that "it is not only mathematics, or the ideas alone of number, extension and figure, that are capable of them (*i.e.* demonstrations), no more than it is these ideas alone and their modes, that are capable of intuition[3]," he subsequently substituted the following much more humble claim. "It has been generally taken for granted, that mathematics alone are capable of demonstrative certainty: but to have such an agreement or disagreement as may intuitively be perceived, being, as I imagine, not the privilege of the ideas of number, extension, and figure alone, it may possibly be the want of due method and application in us, and not of sufficient evidence in things, that demonstration has been thought to have so little to do in other parts of knowledge and been scarce so much as aimed at by any but mathematicians[4]." The "want of due method and application in us" which he here mentions, were two causes he was always inclined to assign for our failure to raise Ethics to the level of a science. The want of "indifferency," since "vices, passion, and dominating interest" are opposed to it, is an obstacle repeatedly recognised; while the special difficulties inherent in the subject, might, he always hopes, be some day overcome by an extension of "Algebra, or something of that kind[5]."

The greater caution in pressing the claims of Ethics to the dignity of a demonstrative science which we find in the fourth edition, is also to some extent reflected in Locke's correspondence with Molyneux. Early in their intercourse his admiring

[1] Bk IV. Ch. iii. § 18.
[2] *loc. cit.*
[3] Bk IV. Ch. ii. § 9.
[4] *loc. cit.*, 4th and following Editions.
[5] Bk IV. Ch. iii. § 20.

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correspondent urged the author of the *Essay* to "oblige the world with a treatise of morals, drawn up.....according to the mathematical method." To this request Locke replied that "though by the view I had of moral ideas, whilst I was considering that subject, I thought I saw that morality might be demonstrably made out; yet, whether I am able so to make it out is another question[1]," at the same time promising to consider the matter further. Molyneux, however, would not be so easily denied, and returns to the subject again with ardour[2], and he appears not to have been alone in his insistence on this fresh undertaking. Some years later Locke writes that he has laid up some materials for such a work, but excuses himself from its execution on the grounds of age and ill-health. The Gospel, too, he holds, "contains so perfect a body of Ethics that reason may be excused from the enquiry," and he confesses that he is one who prefers to "employ the little time and strength he has in other researches, wherein he finds himself more in the dark[3]."

Although Locke was never able to satisfy the desire of his friend, and seems to have felt at least something of the difficulties which lay in the way of any attempt to do so, he never really wavered from his conviction that a strictly demonstrative method could be applied to Ethics. His explanation of the demonstrative character of Mathematics, with all that this involves, and the parallel which he instituted between Mathematics and Ethics, constitute, indeed, two of the main positive conclusions of the *Essay*. To have shown how in these two fields of thought at least, the human mind can construct systems of knowledge at once certain and universal, must have appeared to the author a very considerable achievement. Nor would his sense of satisfaction be lessened by the consciousness that he had only reached in a more thorough and systematical manner results which others had been more tentatively approaching. For in this, as in so many other respects, Locke was but giving its most complete expression to one of the intellectual movements of his age. The attempt to find an explanation for the unique position of Mathematics, and to raise Ethics to a similar level of scientific certainty, had engaged other thinkers in England before Locke, and in order fully to comprehend the significance of Locke's theory it will be necessary to consider the historical development of the problem.

When the modern world had finally turned its back upon

[1] Locke to Molyneux. Sept. 20th, 1692.
[2] Molyneux to Locke. Dec. 22nd, 1692.
[3] Locke to Molyneux. March 30th, 1696.

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the appeals to authority, upon which the superstructure of Scholasticism had rested, and determined to see truth with its own eyes, it found one of its main sources of inspiration, and one of its earliest fields of successful achievement, in Mathematics. How small a place Mathematics had found in the recognised system of education under the old regime we perhaps best realise when we remember that Hobbes was forty years of age when for the first time he turned over the leaves of Euclid's Elements. The freshness and charm which he found in the closely knit chain of demonstration did not appeal to him alone. Here at last, it seemed to thinkers of that period, was furnished a model of what Scholasticism had failed to supply, and of what the modern seekers after truth had not hitherto attained, *viz.*, a system of demonstrative knowledge which carried one on from step to step with irresistible conviction. To reduce all knowledge to a mathematical type, became for its more daring speculators the leading epistemological problem of the age; while more cautious thinkers sought to discover a reason for the pre-eminence in demonstrative capacity of mathematical conceptions.

With the wider questions of the influence of Mathematics upon general theories of knowledge, we are not now immediately concerned. Our interest must be concentrated upon the more critical form of enquiry thus suggested, which seeks an explanation for the apparently solitary grandeur of the mathematical sciences, with a view to raising other branches of knowledge to equal thrones, if that be possible.

Hobbes, while endeavouring to give his general theory of knowledge a mathematical colouring by means of his crude representation of reasoning as a process of addition and subtraction, recognises the unique position of the mathematical sciences. Geometry, he declares, is "the only science that it hath pleased God hitherto to bestow on mankind" (*Leviathan*, Pt I. Ch. iv.). But he has no reason to offer in explanation of its pre-eminence beyond the circumstance that in Geometry men have settled the signification of words in definitions which are set out at the start, and the suggestion is that equally good results might be obtained in other branches of knowledge, if only men would be more careful in defining the terms they make use of. It is to Hobbes that we must trace the attempt of subsequent writers to establish a close relation between Ethics and Mathematics. His speculations, where they touched upon the question of conduct, seemed to his contemporaries to be simply subversive of morality. In opposition to such a result, the current of British speculation was turned towards the attempt to construct a rational system of

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Ethics, and since Mathematics was the only department of knowledge which had yet been reduced to the form of a science, to do so appeared to be equivalent to showing that Ethics might be placed on a level with Mathematics. The problem consequently becomes at once more urgent and more definite. It is henceforth, not simply how is a demonstrative science of Mathematics possible, and how can other branches of knowledge be reduced to a similar scientific form; but how can the rules of human conduct be rescued from the merely conventional interpretation which seems to threaten them, and be shown to be as demonstrably certain as the propositions of Mathematics.

The attempt to find a rational foundation for morality was first made in England by the group of thinkers commonly known as the Cambridge Platonists[1]. The objective validity of moral distinctions—the "eternal and immutable" nature of morality—was made by them to depend upon the nature of the subject-matter of Ethics. In contradistinction to the transitory affections of sense, they sought to bring out the presence in knowledge of permanent *a priori* notions or Ideas, due to the activity of the mind itself. From the comparison of such notions, and the detection of their relations to each other, resulted, according to them, what is properly speaking knowledge, an apprehension of truths which are in their nature eternal; and it is with such notions and such knowledge that Ethics is concerned. Although some members of the School might hesitate to ascribe to the propositions of Mathematics the full dignity of "Æternae Veritates[2]," whenever an attempt was made to illustrate the nature of these intelligible Ideas, and of the knowledge of which they are the subject-matter, resort was almost invariably had to Mathematics. Thus, although no direct attempt is made to connect Mathematics and Ethics, both sciences being included in a more general theory of knowledge, by their insistence on the ideal or non-sensible character of mathematical conceptions[3], and by their special endeavour to represent Ethics as a similarly constituted body of demonstrative knowledge, the Cambridge Platonists were not without their influence on the special problem which we are investigating.

[1] The numerous points of connection between Locke and the members of this School have been brought out by Dr von Hertling.

[2] *E.g.* Smith, following Plato, refers Mathematics to a lower stage of knowledge than that on which we attain to "a naked intuition of eternal truth" (*Select Discourses*, London, 1660, pp. 97–8).

[3] Thus Cudworth writes: "There is no material triangle to be found that is mathematically exact and accurate." (*Treatise*, Bk IV. Ch. iii. § 17.)

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For the Cambridge Platonists the separation of the subject-matter of Mathematics from sensible existence could in no way derogate from its reality. The point of view, however, from which greater reality is ascribed to universal notions than to the particular things of sense, was not one which could be long maintained in seventeenth-century England. Now, if we look for reality to the world as revealed to sense, and at the same time maintain the non-sensible nature of mathematical conceptions, the only course open to us is to describe the subject-matter of the mathematical sciences as a mental construction; making subsequently the best defence we can for the reality of the knowledge so attained. The first hint of this position seems to be given by Glanville, who subscribes to the remark of Hobbes, that Mathematics is "the only science Heaven hath yet vouchsafed humanity." Though at times merely repeating the explanation of Hobbes that in Mathematics alone have names a fixed signification, he at least suggests the point of view which was to be adopted and developed by Cumberland and Locke. "The knowledge we have of Mathematics," he remarks in one place, "hath no reason to elate us; since by them we know but numbers and figures, creatures of our own, and are yet ignorant of our Maker's[1]." He does no more than barely express this antithesis between our knowledge of Mathematics and our knowledge of that Nature which we do not create but find; he makes no attempt to explain how by thus seemingly cutting ourselves off from reality we can escape the condemnation which he is ready to pronounce against building castles in the air.

Cumberland's Treatise *De legibus Naturae* was published in the year 1672, a couple of years after the famous meeting of "five or six friends," at which the necessity of an examination of the nature and bounds of human knowledge first forced itself home upon Locke. Seeing, however, that the *Essay* did not appear for another eighteen years, there was clearly ample time for the thorough assimilation of any materials that Cumberland had to offer towards the solution of its problem. Though purely ethical in intention, the work of Cumberland contains incidental references to the theory of knowledge, which bear considerable resemblance on many points to the theory of the *Essay*. Before proceeding to consider his relation to Locke on the question of the demonstrability of Mathematics and Ethics, it may be well to point out the extent to which there is a general agreement between the epistemological positions of the two writers.

[1] *The Vanity of Dogmatising*, pp. 209–10.

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At the outset Cumberland rejects the theory of innate principles. Not, indeed, that he is resolutely opposed to it like Locke, since he is willing to admit the possibility of a twofold origin of knowledge. The principles in question might, he thinks, have been born with us, and yet afterwards impressed upon us from without. The Theory of Innateness, however, seems to him an insecure foundation for natural religion and morality, seeing that it is rejected by many, while it is not susceptible of proof to those who deny the assumptions on which it proceeds[1]. Instead of claiming certain first principles as an original gift of Nature to man, and basing his ethical theory upon this assumption, he undertakes to show that the highest truths of morality are necessarily suggested to the minds of men from the nature of things and of themselves[2], and are perceived and remembered by men as long as their faculties remain unimpaired. Thus, having stated and explained his supreme "Law of Nature," the rule of universal benevolence or regard to the common good, he proceeds: "I must now show both how the conceptions contained in the foregoing proposition necessarily enter the minds of men, and that when they are there they are necessarily connected, that is, that they constitute a true proposition[3]." Moreover, by doing so he thinks he can supply morality with that divine sanction of which it stands in need. For, the perception of such a self-evident proposition as that enforcing universal benevolence as the condition of the happiest state of each and all, is a strictly necessary effect; depending partly upon the laws of motion, in accordance with which impressions are made upon the organs of sense, and partly upon the nature of the mind, which cannot but apprehend the conceptions thus forced upon it, and their connection which constitutes the truth of the position. Consequently the proposition in question is at once "natural," and an expression of the will of God, who is both the first mover of matter and the efficient cause of the mind. It is evident, at once, from this crude attempt to prove the "naturalness" and truth of first principles by an appeal to a process of necessary causation, that Cumberland had not awakened even to Locke's consciousness of the unique character of enquiries into knowledge. Locke's ultimate appeal in the case of all general truths is to the self-evidence of the propositions themselves. We must remember, however, that to him, too, an enquiry into the "original" of knowledge seemed in some way a necessary preliminary to the determination of its "certainty and extent"; and that although his criticism of the

[1] *De legibus Naturae.* Prolegomena, § 5.
[2] *Op. cit.*, Ch. i. § 1.
[3] *Op. cit.*, Ch. i. § 5.

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theory of innate principles was in effect an attempt to substitute an immanent for an external criterion of knowledge, he was by no means aware of all that this involved.

Laying aside the possibility of an ante-natal source of knowledge, Cumberland describes its "original" in much the same manner as Locke. He appeals to the experience of all men as supporting him in recognising a twofold manner in which Simple Apprehensions are excited in our minds. "First, by the immediate presence and operation of the object upon the mind; in which manner the mind is conscious of its own actions, and also of the motions of the Imagination, or of the phantasms which appear to it. Secondly, by means of our external senses, nerves and membranes[1]." These two sources of Simple Apprehensions he further refers to as internal and external Sensation. The mind, however, has faculties superior to these, among which he includes a peculiar power of forming universal notions by omitting the distinguishing accidents of things[2]. Upon the possession of this faculty depends the possibility of Science and of framing rules of conduct which are unchangeable and consequently in a sense eternal[3].

With Cumberland, then, as with Locke, the mind begins with Simple Apprehensions or Simple Ideas which refer either to external things without it, or to its own operations, and proceeds to form out of these materials the universal conceptions with which Science is concerned. For both, too, the subject-matters of Mathematics and Ethics are in a more special sense to be referred to the mind. It is the source, not only of the universality, but of the entire content of the ideas concerned. The mathematician is only directly concerned with ideal or mental realities, and does not assume the actual existence of anything corresponding to them *in rerum Natura*. Although Truth consists in conformity with things, Cumberland explains that certain mathematical propositions may be called true though nothing exists to which they are conformable. For since they do not make any assertion concerning things without the mind, they are not to be compared with them. Their truth consists in an agreement between the terms of which they are composed, and nothing more than this is to be looked for in their case[4]. Cumberland insists, however, that if such propo-

[1] *Op. cit.*, Ch i. § 5. [2] *Op. cit.*, Ch. ii. § 11.

[3] *Loc. cit.* Cf. the sense in which Locke explains the nature of "Æternae Veritates." Bk IV. Ch. ii. § 14.

[4] "Nec his obstat quod dentur propositiones quaedam Mathematicae, aliaeque his similes excogitentur, quae verae dicantur licet nihil existit, cui sint conformes. Hujusmodi quippe suppositiones, quia nihil pronunciant de rebus extra mentem, cum talibus non sunt conferendae, sed con-

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sitions are to be regarded as possessing truth, it is only on condition that the terms of which they are composed are such that they are capable of at least an approximate realisation in Nature. If this condition is not satisfied the propositions in question are trifling[1]. How we can be assured of the real possibility of their existence we are not directly told. We saw that the assumption upon which Locke proceeded was that when our ideas are thoroughly intelligible, the absence of inconsistency between them is a sufficient guarantee of the possibility of real existence conformable to them. Cumberland seems to lay stress, instead, on the dependence of mathematical constructions on human activity.

His aim, Cumberland tells us, is to construct a science of Ethics after this mathematical model. We do not presuppose the actual existence of the actions and dispositions of which the science treats, but depend upon the assurance that their realisation is at all events possible. We may thus demonstrate *a priori* certain propositions concerning Universal Benevolence, which are necessarily true, whether or not any one has ever adopted the Common Good as his end, and performed the actions which are necessary as means to its attainment[2].

Cumberland does, indeed, recognise certain obstacles in the way of the construction and application to practice of a perfect ethical code. On the one hand, there is the practical difficulty that since for the complete realisation of the ideal of a good which shall be at once the greatest possible good of each and all, the cooperation of others is essential, its attainment does not lie wholly within the power of any individual[3]. On the other hand, it would seem that there are cases so complicated that with our present limited insight we cannot even theoretically determine in complete detail what ought to be done[4].

sensus tantum inter terminos, ex quibus fiunt, est quaerendus, in eoque veritas consistit earum." *Op. cit.*, Ch. ii. § 6.

[1] "Hae tamen nullum habent in vita humana usum, nisi aliquid extra cogitationes nostras reperiatur factum, aut a nobis fiat, quod nihilo (quod quidem consideratu dignum) a conceptibus animae formatis differat. Si earum subjectum, aut aliquid quam proxime simile non possit existere, nugatoriae sunt, et aequivoce tantum verae dicuntur." *Loc. cit.*

[2] "Eadem igitur methodo qua generalia Mathesiôs theoremata problematum constructioni deservientia liberantur ab incertitudine praefugiorum, quae fiunt de actibus contingenter futuris, abstrahendo nempe ab affirmationibus de futura existentia talium constructionum, et demonstrando proprietates et effecta inde secutura (si quando fiant) visum est primo principia quaedam clara de effectis propriis, partibus, variisque respectibus amoris universalis tradere, nihil interim pronunciando de ejus existentia; certus interea eo, quod possibilis sit, multa inde deduci posse, quae in praxi morali nos dirigant, quod theoremata praestant in possibile constructione problematum." *Op. cit.*, Ch. i. § 8. Cf. too the preceding section.

[3] *Op. cit.*, Ch. i. § 8.

[4] *Op. cit.*, Ch. iv. § 4.

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These difficulties, however, he holds, have their parallels in Geometry. Curiously enough he finds an analogy to the practical ethical difficulty suggested, in the insolubility of a geometrical problem from insufficient data; while he compares the theoretical indeterminability of the right course of action with the practical impossibility of drawing a perfect figure.

Where pure geometry would fail, however, the analytical method may succeed. Ethics, Cumberland considers, should imitate this discovery of Descartes, "as the noblest pattern of science"; and he consequently endeavours to discover a connection between the methods of Ethics and Algebra[1]. In Algebra, we seek to determine the value of an unknown quantity, which we express by a symbol, by means of its relations to known quantities. Similarly, in Ethics, we have at starting little better than a symbolical representation of the end of which we are in search, under the designation of the "Chief Good" or "Happiness"; and we only gradually come to discover the contents of this ideal which we have presupposed, by means of its relations to those human actions and faculties upon which it depends. We solve a complex equation in Algebra by singling out the known terms and determining by their means the unknown. The ethical problem consists in the identification of the end (all the good that lies in our power) with the means (our own actions); it is solved by first detecting the most obvious or easiest actions which promote the end, and from these proceeding to the more difficult[2].

We see then that Cumberland and Locke agree in holding that mathematical propositions are primarily concerned with mental constructions, but that they may nevertheless be denominated "true," or regarded as furnishing "real" knowledge, since we can somehow be assured of the possible existence of a corresponding reality. The two writers are again at one in holding that Ethics may be treated in a manner similar to Mathematics, while of the two Cumberland would appear to have been more fully alive to the special difficulties of the Ethical problem. For both, again, the recent application of Algebra to Geometry seemed to hold out hopes of a similar revolution in the theory of morals. The resemblance in these points between the views of Cumberland and the more fully developed theory of Locke, would of itself be sufficient to warrant the assertion that the latter was not arrived at in ignorance of the former. This presumption is intensified, and indeed rendered a practical

[1] Locke, also, expresses the hope that "Algebra, or something of that kind" may remove the difficulties arising from the complex character of moral ideas. Bk IV. Ch. iii. § 20.

[2] *Op. cit.*, Ch. iv. § 4.

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certainty, when we find Locke referring to and answering a difficulty raised by Cumberland. For, after all has been said, Cumberland finds that there is a source of difficulty in Ethics which does not exist in Mathematics, and which renders the former science of necessity less capable of exactness. This obstacle arises from the circumstance that certain presuppositions of Ethics, *viz.*, God and man, their actions, and relations to each other, cannot be so accurately known as the presuppositions of Mathematics[1]. "Nor let anyone object," writes Locke, "that the names of substances are often to be made use of in morality, as well as those of modes, from which will arise obscurity. For as to substances, when concerned in moral discourses, their divers natures are not so much enquired into as supposed; v. g., when we say that 'man is subject to law,' we mean nothing by man but a corporeal, rational creature; what the real essence or other qualities of that creature are in this case, is no way considered. And therefore, whether a child or a changeling be a man in a physical sense, may among the naturalists be as disputable as it will, it concerns not at all the 'moral man', as I may call him, which is this immoveable unchangeable idea, a corporeal rational being.....The names of substances, if they be used in them as they should, can no more disturb moral than they do mathematical discourses: where, if the mathematician speak of a cube or globe of gold, or any other body, he has his clear settled idea, which varies not, though it may, by mistake, be applied to a particular body to which it belongs not[2]."

[1] "Fatemur interim in materia prudentiae moralis ea, quae dantur, seu ut cognita sumuntur, quae sunt Deus, et homines, eorumque actus, et relationes mutuae, non adeo accurate nota esse, ac ea quae in certa mensura seu quantitate dantur in Mathesi; ideoque quae ex iis colliguntur eodem defectu *ἀκριβείας* laborare." *Op. cit.*, Ch. iv. § 4.

[2] Bk III. Ch. xi. § 16.

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IV.—PHILOSOPHY IN ITS NATIONAL DEVELOPMENTS.

By Professor Knight.

The Philosophy of the World is an organic whole, which has moved forward in uninterrupted continuity,—although not always at the same speed, or on the same lines,—from the first to the last stage of its evolution. What has occasionally seemed to the casual observer to be a break in its development, owing to the absence of visible links, has afterwards—when the missing links have been discovered—become part of a chain of evidence, demonstrating the unity of the whole process.

The theory of a continuous mundane development, creating by slow evolution those products, which are themselves destined to be superseded by new ones—in other words, the theory of "a perpetual becoming"—has grown in scientific clearness from the days of Heraclitus to our own; and is now accepted, with few dissentient voices, by those who have been initiated in Philosophy. But this doctrine of becoming is the theoretic interpretation of only one aspect of the universe. If "all things are double one against another," what endures is as important as that which changes; and the Eleatic Philosophy is as true as the Heraclitic. Unity and variety together constitute the totality of existence; and each is necessary to the other. Paradoxical as it may seem, permanence lies at the background of every change; while perpetual change is the *conditio sine qua non* of all endurance.

To apply this generalisation at once to the subject to be discussed. In a certain sense, the whole Philosophy of the World is radically one. Being the outcome of a continuous cosmic process, operating in all lands, its problems are fundamentally the same; but, within each country, they differentiate themselves in detail. The surface variety has been necessary to exhibit the underlying unity, while the latter has been equally needed to unite the miscellaneous fragments in a single whole.

The truth embodied in the law of Evolution has proved, to

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most thoughtful persons, that the numerous phases of opinion and belief, as well as the manifold types of national character which have arisen in the course of History, have in no single instance been matter of accident or chance. They have been due to radical, if not to racial, characteristics of Human Nature; and they are therefore likely to be as persistent as any of the types of organic structure, which the sciences disclose. The bent, or national tendency, of every people is due to myriad influences, which have played upon it from the dawn of time. These influences which have, in a subtle way, differentiated it from all others, are often occult, and underworking. They are not always known by those who inherit them from within, or receive them from without; and they are seldom visible to others. What becomes apparent in the recorded history of a nation is but a fragment of that which has gone to the formation of the national character. The latter has been due to the joint operation of causes both external and internal, and of forces which have worked beneath as well as above the stream of development.

This principle applies to all the elements which go to constitute the life of mankind. Like every other product, the Philosophy of the World has passed through multitudinous phases; widely different each from each in the amount of insight they have shewn, but all of them of value to the race at large. If the Literature, the Art, the Politics, the Social Life, and the Religion of the world together constitute a vital and organic whole—which differentiates itself here and there, because of the localities in which it works—its Philosophy is certainly no exception to this law of development. While there has been an organic unity operating underneath all change,—and even guiding apparent anomalies of form,—variety of aspect has been equally necessary; and the expansion of Philosophy throughout the ages has been due to the joint influence of them both.

If, however, the historian of Philosophy attempted to trace its developments from a cosmopolitan point of view, ignoring the differences of race and nationality, he would pass from country to country in a somewhat bewildering fashion. Organic differences would baffle him, in any attempt to trace the underlying unity, with a steady hand. It is therefore necessary not only to recognise, but to emphasise, the differences which now exist; and to trace them carefully in detail, while indicating their common origin. The old historians of Philosophy were, for the most part, mere chroniclers. They put down in their books a series of statements, more or less accurate, as to what this or that philosopher thought, or "held," or taught. These

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recorded opinions were mere isolated *dicta*, chronicled in an irregular manner, with no attempt to trace their origin, their connection, or their influence. Others, since the time of Ritter, have tried to exhibit the course of Philosophy as one of organic growth; and all the numerous and noteworthy histories of it, which have been written in Germany, France, and England since Ritter's time—although their interpretations and criticisms may have been coloured by the particular school of thought to which the writer belonged—have adopted, more or less, the guiding principle of his book.

It has now become so obvious as to amount almost to a commonplace, that an adequate history of Philosophy can be constructed, only when the thought of the world is regarded as an organic whole; and when every phase of it—including those which to us of the 19th century may be grotesque, or even repulsive—receives its due, as the passing aspect of an underlying tendency. But, while every link in the chain is seen to be a real element in the cosmos—and some of the things which a mature civilization considers "least honourable" are nevertheless recognised as having contributed to the final result—it is absolutely necessary for the historian to take up nation after nation, *seriatim*; to deal with each of them individually, tracing those collateral influences which have come into it from abroad, as well as those which have reached it by direct inheritance within its own area.

It is easy to over-magnify the local influences which have shaped the Philosophy of a particular people; while the wider racial ones, underlying all provincial tendencies, are ignored. But, while many histories of Philosophy, since Ritter's time, have been compiled with the view of exhibiting the "increasing purpose" of the whole, few historians have tried to unfold the characteristics of each race, as an organic growth within its own domain, or province. I therefore think that it should be the aim of future historians to shew the fundamental differences inherent in each race—and *thus* to explain the local phases and peculiarities of development—rather than to emphasise the underlying unity of the thought of the world.

That there is a distinctive national colour, in all the great philosophies, cannot be denied by any competently informed person; nor can it be ignored in any adequate historical treatment of them. It is also important to note that a scientific examination of the provincial aspects of Philosophy is, on the whole, a return to precision, from the vagueness which a sense of the unity of the thought of the world is apt to engender. If we start with the cosmopolitan idea, and with the two main "streams of tendency"—the real and the ideal—and traverse

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the centuries with their aid, setting down so much as due to idealism and so much to realism, we do not achieve much in the way of explanation, and we are apt to become nebulous and hazy.

Nowadays, when every one in the world is a sort of "next door neighbour"—when we have "thrown a girdle round the earth" in less than "forty seconds," and may soon be able to telephone to the very ends of the world—we are probably inclined to over-estimate the unity of the race. But there is no evidence to shew that acquaintance with other communities, and a knowledge of their distinctive features—knowledge which grows so rapidly in an age of scientific progress—will tend to produce greater uniformity of type, will lessen the differences which exist, or minimise the distinctive features of each man, woman, or child.

Besides, the abolition of its differences would be a serious loss to the world at large. Even were it possible, it would be a prodigious mistake to attempt to reduce the races of mankind to a dead level of uniformity, to europeanise the Indian, to asiaticise the African, to americanise the Polynesian, and so on. It would not only be a very wasteful policy to each of them while it lasted, but it would involve a serious loss to the world, were it even partially successful. What we need is the removal of every obstacle to individual and national development. Each race demands the freest possible evolution of opinion, character, belief, and action in all directions; "live and let live" being the law of the house, alike in individual families, and in mixed communities of men. Every extreme corrects, if it does not neutralise, the rest; and if the differentiation of the race be carried much further in the future, its unity instead of disappearing will become more and more apparent.

Within each nation, however, normal development proceeds from within outwards, not from without inwards. The higher culture must not be superimposed *ab extra*, it must be evolved *ab intra*. It must be reached by the slow processes of interior growth, and subsequent expansion. We cannot raise a people low in civilization up to a higher level, by thrusting upon it an alien type of life and culture, still less by making use of compulsion. We may graft, with the utmost skill, a new branch on the old stem; but, even in that case, the old will dominate the new, not the new the old. A conviction which is to last, and to bear fruit, must invariably proceed from within. If it is to endure, it must be educed; and that involves a long, and often a tedious, historic process. The result is very seldom accomplished by argument. It is much more

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largely due to unconscious agencies than to conscious forces. It would seem to be the case that there must be a concurrent development of the physical frame and the animal functions, with an increase of brain-power, and a refinement of feeling; in other words, a growth of "the senses and the intellect" on the one hand, of "the emotions and the will" on the other, before any radically new manifestation of Human Nature can take place.

Another point of importance is this. The time during which the several races of mankind have already lasted has some bearing on the question of their probable duration. If the lower types began their career much further back, and have therefore a greater ancestry than the higher ones, it may be asked 'Have they none of the prescriptive rights of primogeniture?' In the physical cosmos outside of man we find organisms persistent for millions of years, and doing great service to the world; and it is most natural to ask why all the lower types of Human Nature should be uprooted, to make room for what we call (and rightly call) the higher ones; while every type is relative to a zero-point, from which they all have started, which gives us a standard for comparison, and by which the excellence of each may be appraised? We may surely ask, why all the lower races should be sacrificed for the good of the higher ones? And we may answer the question in the same way in which most humane persons object to the unlimited vivisection of our canine friends, for a remote possible benefit to the human race. Then, have we not found historically that the higher races have occasionally (and most righteously) been superseded by the lower ones, although only for a time?

More important it is to note that many persons who forsake a lower for a higher creed bring with them, and cannot help bringing, much that passed current in the lower; while the two cannot amalgamate. Many who abandon the customs of their country, who give up—it may be on conviction, or it may be through bribery—the faith of their ancestors, adopting a new cult, and becoming 'proselytes of the gate' at the instigation of the missionary, develop sundry vices in the course of the process. Any one who, on a sudden, accepts ideas which are not native to him, and practices which are not hereditary, becomes unnatural. He loses, rather than gains, by the process. Contact with the higher types of civilization has not always elevated the lower. It is so much easier for the latter to assimilate the vices, than to imitate the virtues of the former; and the healthy relation between the two, when they happen to be brought into contact, is not that the higher should force

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its customs or practices, its Religion, or Government, or Philosophy upon the lower—still less that the lower should try to extinguish the higher—but that each should tolerate the other, and gain from contact with it, as much as it can healthily assimilate.

It follows that it is not only a weakness, it is practical folly for the votaries of any one type of civilization to act upon the principle "this is the best for all mankind." A system of belief or practice which is not indigenous—even although it is the outcome of a higher civilization, developing itself elsewhere—if transplanted to a foreign soil, is doomed to failure *ab initio*. If it seems to succeed for a time, its success is always more apparent than real; and in a vast number of instances, the reactions are stupendous. The reason is that the old currents of belief and practice, which were hereditary race-elements, continue to operate silently, underneath the new "stream of tendency." Differentiation is of course incessantly at work, never ceasing for a moment of time amongst any people: but the healthful changes are always slow and gradual ones, which do not record themselves at once. If written at the time, it is by a sort of invisible ink, which only becomes apparent after being subjected to the fire.

If, on this matter, we appeal to history—wisely recorded and interpreted—we find that, although it has been possible to *force* new laws, manners and customs, even a new Language, Philosophy, and Religion, on a conquered people, the success of the victor has been a deceptive triumph. The conquered people are crushed for a time. They are humiliated, perhaps made sullen by defeat; but they are usually ready for a fresh trial of strength, at the earliest possible opportunity. By the curious glamour of reaction from antiquated habit, what has been artificially introduced, even by conquest, may be welcomed for a time; and it is almost certain to be hailed by those who appreciate novelty; but the superior race, thrusting its latest ideals on one with which they have no constitutional affinity, may—by its sudden dominancy—destroy the native bloom of character and habit in the inferior people; while a subsequent reaction may drive the latter race to a lower level than that from which it was apparently but artificially raised.

It must be admitted that some crude developments, or diseased products, of our humanity may be dealt with at once by drastic processes; that is to say, by the rapid incoming of new, and at times of militant influence. Such an advent of beneficent power may legitimately extinguish, by its strong hand, the excesses of a rudimentary civilization; and humanity at large is the gainer by such a process of physical and moral

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surgery combined[1]. Nevertheless, in all cases of one civilization appealing to another, the transitions should be as gradual as it is possible to make them.

Even were it possible artificially to combine two races (a higher and a lower), as provinces can be territorially annexed, this would not prove either, first, that all the members of the lower were able to receive the higher type of thought, feeling and action; or secondly, that the higher might not be injured by receiving and assimilating the practice of the lower. If a higher race cannot intermarry with a lower, and have a progeny that is healthful, it is surely worse than useless to attempt a forcible intermarriage of ideas. But what is often aimed at is not the intermarriage of ideas, but the complete substitution of one set for another. It is the inoculation of the lower races, by the opinions of the higher; and the superimposition of the latter on the former, so as to raise them to a new level, by external means.

This applies not only to the African, the American, and some of the Asiatic races, but also to several European ones. Contact with the people of a different race amongst ourselves in the West, has often hindered rather than helped their development. The prejudices and the vices of the new race have been transmitted, and even intensified, more quickly than its virtues; while some of the dormant excellencies of the inferior people have died away in the process.

On the other hand, there can be little doubt that the introduction of a new type of civilization in the midst of an old one has at times touched the latter in its deepest parts. It has occasionally quickened the development of powers, which have been lying latent for centuries. What has at first seemed a disaster to a nation, which has lived for generations in a particular groove, and been there under the influence of a few provincial ideas, has afterwards led to more than a renewal of its youth. The introduction of elements, which have coalesced naturally with those which were verging to decay, has given a fresh lease of life to such a people; and here we reach the sole ground on which the work of the missionary of another creed who aims at being the pioneer of a new civilization can be defended. There is no limit to the influence which may be exercised by the higher races over the lower, if such influence be exerted naturally, and by wise methods.

Turning now from these semi-anthropological considerations, I reach the more strictly philosophical problem of the relation

[1] For example, infanticide, slave-dealing, the burning of suspected witches, cruelty to all who differ from you, etc. etc. might be dealt with, as every civilized people now deal with cannibalism.

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in which the race stands to the individual, and the individual to the race—or of the many to the one, and the one to the many—in the matter of intellectual system-building. There is no doubt that the two factors in the historic evolution of the human race have been the power of the individual in leading the masses, and the power of the masses in controlling the individual. These two are complementary forces, centrifugal and centripetal. The power of the individual in determining a new forward movement amongst the mass of his contemporaries is quite as great as any power they can exert in restraining him from a too rapid, it may be a meteoric progress. When a community has sunk into a somewhat monotonous uniformity—whether of belief or of practice—when it has been working steadily on in the grooves of tradition, a longing, half understood at first, begins to arise within it for the appearance of a new Leader, for the guidance of an Individual, for the "Coming Man," who will be able to focus contemporary wants, and to interpret them. In every corporate body—whether it be a State, or a Church, or a Philosophical School—there must be Leaders; and it is by the commanding force of its greater minds and wills, by their individuality and their special power, that all re-formations of opinion and practice are wrought out. The stronger have always given the law to the weaker—although it is also true, as a poet puts it, that "strongest minds are those of whom this noisy world hears least": but to suppose that the great movements of History, and the formation of its chief Philosophies, or Social Institutions, have been due to the unconscious working of blind forces is as great a mistake as it is to ignore or undervalue the latter. The brain power of the individual has been a potent factor in the formation of every philosophical system, and it comes out in many ways. It is needed 1st adequately to understand the spirit of the age, 2nd to divine its latent tendencies, and appraise its underworking currents, 3rd to guide it onwards in a wise and fruitful manner, 4th to reconstruct and reinterpret ancient theories, by bringing them into vital relation with the present age, and 5th to sow the seeds of future development in a natural manner.

These, and many other points, might now be considered in detail; but as the aim of this paper is rather to urge the importance of the opposite and balancing truth of the influence of Race and Nationality in determining the great systems of opinion, an illustration of this thesis—founded on the contrast between Greek Philosophy, and its Oriental types—may be more appropriate.

Greece was the land of the ideal, in every sense of the

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word; and there it was that the ideal was first made real to the human consciousness. The fascination which the race inhabiting that little promontory of the Ægean has exercised over the thought and the art of the world—over its letters, its science, and its politics—has had no parallel in subsequent history. While each nation has contributed its own share to the progress of humanity—and we may say in general that from the Semitic races we have inherited our Religion, from Greece our Philosophy and Art combined, and from Italy our Law—the Hellenic spirit has ruled the world in a manner altogether unique. This has been due to many concurrent causes. Perhaps the most remarkable feature, in the Greek world taken as a whole, is its manifoldness, and its manifold completeness; in other words the rapid development of the human intellect and genius, in many different directions simultaneously, and its perfection in each; so that the productions of Greece remain to this hour, the admiration and the despair of the world. No subsequent type of civilization has transcended it, so that the great Hellenic achievements remain in the very forefront of the world's development, even while an "increasing purpose" has been running through the subsequent ages. In the department of Philosophy, while the speculative thought of the world has of necessity changed, we find in Greece the germs of every subsequent theory; and, what is perhaps of still greater consequence, we find the later opinion of the world continually reverting to the positions taken up in the earliest Greek schools. There we find the teachings of Philosophy expressed with the greatest clearness and vigour, as well as subtlety, and we find its distinctive types more sharply defined, than anywhere else, until we reach the Philosophy of the last two centuries.

Another general feature in the Philosophy of Greece is the singularly rapid development and succession of its schools, produced by the active movements of thought within them. One system led on, swiftly and inevitably, to another; the existence of the latter being due to the very completeness which characterised its predecessor. This rapid succession of systems was not a symptom of intellectual decay, but of vitality. The quick absorption and assimilation of the elements which nourish the intellectual life of a people is a sign of sustained national vigour. And so, in marked contrast to the uniformity and stagnation which characterised the brooding East, Greece presents the spectacle of ceaseless activity, and incessant change.

This was doubtless due to the manifoldness of the life of the nation, as much as to anything else; and, (to what has been already mentioned) the intellectual reciprocity, or indebtedness of its Philosophy to its Art, of its Art to its Politics, and its

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Politics to its Religion. Out of the friction of old ideas, and their incessant commingling, new ones emerged. In contrast with this, in the East where tradition for the most part ruled the national mind, it at the same time repressed and fettered it. There was no free play of thought, to break up the routine of the past, and to interfere with the monotony of precedent. If it was reverence that kept the Semitic mind perennially loyal to a few leading ideas, a certain intellectual timorousness —with languor, and love of ease, and other causes, due to climate, race, and temperament—kept the Eastern mind moving sedately, and at times austerely, along the lines of immemorial tradition. There was no desire for change, no thirst for progress, no demand for liberty, such as we find in the West. Hence the uniformity which characterises the Mythology, the Art, and Government of the East, as well as its Philosophy. We find vastness, rigidity, and sameness. Where there is not repression, there is barbaric glitter, and monotonous splendour. The type of mental and moral character among all the Eastern peoples is for the most part the same. It is like the tropical vegetation, of more uniform feature than that which has been developed in the temperate zone. As some one—was it Hegel?—well remarked, the jungle is the physical type of the intellectual and moral life of the East; and it was the want of intellect—with its freedom and movement, its endless bright developments—that kept the East so stationary in Philosophy and Religion, as well as in Government and Art, and prevented the rise of the Sciences. A cumbrous and elaborate ritual overlaid the life of the people, with precepts and practices that fettered it. In contrast with this, it was perhaps due to the inherent vigour of the primitive settlers on the rocky peninsula of Hellas, and to the rapid mingling of diverse races—as wave after wave of emigration and of conquest swept westwards, and turned southwards, from the primitive Aryan home, wherever it was—that the world owes the singular union of flexibility and strength, of force, freedom and pliancy, characteristic of the Greek mind. In Greece, as in the East, climatic causes co-operated with racial tendency; and the physical features of the land—with their variety, and compact beauty—aided the development of national character. Greece was not the land in which Nature could subdue man, or dominate over him. It was pre-eminently the country in which man would become the interpreter of Nature; in which also he would be able to manipulate her forms, and be a deft and cunning workman in the idealization of them. It was not a land in which a doctrine of *nirvana* could possibly arise, or be appreciated. The active and subtle intellect of the people, and its æsthetic and athletic spirit combined, prevented this.

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Thus, from the very first, the philosophy and the mythology of Greece differed from that of the East, and reflected the free creative intelligence of the people.

Another feature which characterised the literature and life of the Hellenic race, as well as its Philosophy, was its love of directness, its going straight to the mark, without intricacy, obscurity or twist. Abundant evidence of this is seen in the evolution of its philosophical schools. Its early infantile curiosity, and its subsequent youthful boldness, (often amounting to rashness), are evident; but intellectual thoroughness, and clear-eyed direct intelligence, are dominant throughout. Many of its early thinkers imagined that they had found a single key by which they could unlock the mystery of the universe at large; but, in these early schools, as well as in the later ones, we find an effort to pierce—by the sheer force of thought, as far as thought could carry—beneath the symbols that obscured it, and the metaphors that entangled it. Metaphoric conceptions ruled the East. They ruled the Semitic mind, and coloured the whole religious literature of the Jews, where anthropomorphic ideas had the upper hand. In Greece, on the contrary, from the very first, speculative minds sought to reach the shrine of pure Being, by the avenue of pure Thought. Vagueness, and even mystery, were abhorrent to them. The blue heaven above, and the bright sea around, suggested clearness, as well as depth; and depth without clearness was not esteemed in Greece. Hence vague suggestions were tracked, if possible, to their root; and were analysed, with a view to the removal of the vagueness, by a process of verification. The Greek did not naturally care for, or believe in, vague impulses which he could not name. Distrusting dim monitors within, the Hellenic mind wished that they should all be brought out of their lurking-places into the light, and that they should answer for themselves in the court of logical appeal. In this there was an element of weakness, as well as of strength; but the historical fact to be noted is that in the whole national life of Greece, we see a striving after *clear conviction;* and this love of light, and perpetual 'coming to the light,' may be said to have given rise to the long succession of its schools of Philosophy.

An equally significant illustration of the influence of Race and Nationality in determining the characteristics of philosophical thought, is to be seen in the modern German "stream of tendency," as compared with the French; and in the British stream, as compared with them both: but, as this may be discussed, if not in subsequent articles, in forthcoming books, it is for the present postponed.

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V.—ON THE APPARENT SIZE OF OBJECTS.

By W. H. R. Rivers.

The most definite experimental evidence in favour of sensations of movement as factors in spatial perception has in the past been derived from the experiments of Wundt[1] on the monocular estimation of the distance of a thread. Hillebrand[2] however has recently shown that Wundt's results probably depended, not on movements of accommodation and their accompanying sensations, but on other factors, especially alteration in the size of the thread. On the other hand, as Dixon[3] has pointed out, Hillebrand's experiments hardly justify him in concluding that movement factors are wholly without influence on the sense of depth.

I have investigated some other phenomena which have been held to prove the influence of movement, and especially of accommodation in spatial perception, and I consider one of them in the present paper, *viz.* the alteration of the apparent size of objects when the accommodation apparatus of the eye is paralysed by atropin.

One of the first to record this phenomenon was Donders[4], and his explanation is still generally accepted. He noticed the appearance especially when the ciliary muscle was only partially paralysed and supposed the effort necessary to see an object distinctly was greater than normal; that the object was in consequence supposed to be nearer, and that as the visual angle had not become greater, there was an apparent diminution in size. The condition was more fully investigated by Förster[5] and Aubert[6], who noticed that an object appeared not only smaller but more distant. They explained the micropsia on the same lines as Donders, and supposed that the appearance of greater distance was due to a secondary inference from the known size of the object. A similar appearance is often observed as a symptom of paralysis of the third nerve from disease and has received the same explanation.

My own observations have led me to the conclusion that

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under the influence of atropin micropsia may arise from two wholly distinct causes. Under certain conditions an object may appear to be diminished in size when looked at directly; under other conditions an object beyond the fixation point appears small, and these two appearances are of very different nature. I shall refer to them throughout as micropsia at the fixation point and micropsia beyond the fixation point respectively.

The phenomenon observed by Förster and Aubert was micropsia at the fixation point, and I will consider this first. Förster found that with partial paralysis of one eye by atropin Jaeger's type appeared smaller to this than to the normal eye, and that diminution in size increased as the type was brought nearer to the eye up to a certain limit. Both far and near limits of the region in which micropsia occurred varied in different individuals depending on the condition of refraction. Aubert saw No. 4 Jaeger at 7 inches only half as large as to the normal eye.

In repeating these experiments I dropped a solution of homatropin (one grain to the ounce) in the left eye. At the end of 20 minutes Jaeger's type appeared distinctly small with this eye when fixed directly. I am myopic, (-3 *D* in the vertical meridian and -4 *D* in the horizontal), and the far limit of the micropsia was 20 cm.: the decrease in size became more marked as the type was brought nearer to the eye, so that at the nearest point where the type could be focussed No. 10 to the left eye appeared nearly as small as No. 6 to the right eye. On trying squares of paper of different sizes, I found that while black squares on a white ground showed marked diminution in size, no such change occurred in the case of white squares on a black ground; these looked even rather larger to the left than to the right eye. Mr E. T. Dixon (emmetropic) kindly made observations for me under homatropin. He observed Jaeger's type smaller with the affected (right) eye from 100 cm. up to 40 cm. No. 10 to the right eye appeared smaller than No. 8 to the left eye. A black square on a white ground appeared smaller, a white square on black ground rather larger to the right than to the left eye. The change in size observed by us was evidently due to irradiation, and as might be expected printed type is a very favourable object for showing the effects of irradiation. It became probable that this form of micropsia depended rather on the dilatation of the pupil than on affection of accommodation and this was proved by the further observation, that with a small artificial pupil before the affected eye no micropsia was observed; the type was equally large to either eye.

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Förster gives several reasons for his belief that the micropsia observed by him was due to the change of accommodation and not to the pupil. His three observers did not notice the micropsia till from 30 to 80 minutes after instillation, although the pupil had dilated earlier. I observed micropsia after 20 minutes, and it was well marked after 25 minutes. Förster also noticed the micropsia especially with strong effort to accommodate and together with lessening or disappearance of blurring, and regarded this as proof of its dependence on the accommodation. He does not appear however to have tried the effect of an artificial small pupil, and he only describes experiments with Jaeger's type.

I have found that the same process of irradiation explains another alteration of apparent size which I have observed. Some time ago I noticed that objects and especially printed letters appeared slightly smaller to my left eye than to my right; the difference was very slight and was only detected when the object was doubled by looking beyond it so that I had my right and left eye images side by side for comparison. There is a very slight difference of refraction between my two eyes and it occurred to me that in cases of marked inequality, there might be a decided difference in the apparent size of objects to the two eyes. This I found to be the case. In one case the apparent difference in size associated with a difference of 2 *D* in refraction was so considerable that No. 10 Jaeger to one eye appeared only as large as No. 6 to the other. In the early cases I examined the micropsia occurred with the relatively more hypermetropic eye and I supposed that it was associated with the greater effort of accommodation necessary to see an object distinctly. Since making the experiments with atropin, I have reexamined some of these cases and found the appearance to be due to irradiation. In the case I have already mentioned a black square on a white ground is considerably diminished in size, but a white square on a black ground is not appreciably altered. With an artificial pupil of 1·5 mm. diameter before each eye, the difference in size was less marked but still present; with a pupil of 1·5 mm. before the hypermetropic eye and one of 2 mm. before the normal eye, no difference of size was observed.

One form of micropsia which occurs under the influence of atropin appears then to be due to dilatation of the pupil, and so far as this form is concerned, there is no evidence in favour of accommodation as a factor in spatial perception. The other form which I have called micropsia beyond the fixation point is of more interest psychologically. It is an appearance of the

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same nature as one which may be observed with the normal eye. If one eye be closed, the other fixed on a near object, and at the same time a distant object observed, the distant object will appear to decrease in size if the fixed object be brought nearer to the eye; when the fixed object is moved away from the eye, the distant object will appear to increase in size. Similarly an object nearer than the fixed object will appear to increase in size when the fixed object recedes from the eye, and to decrease in size when the fixed object approaches the eye. The appearance may be well observed with Jaeger's type. If this be held at ordinary reading distance and a nearer point be fixed the type will appear smaller; on bringing the fixed point nearer, further diminution will take place and the micropsia may be so marked that No. 10 may look as small as No. 4 or even No. 2. At the same time the type becomes blurred, which interferes to a certain extent with the illusion. Enlargement of the type nearer than the fixation point is less easy to observe but does occur. These appearances may be summed up by saying that objects beyond the fixation point appear smaller and objects nearer than the fixation point larger than they would do if fixed directly. One apparent exception occurs to this; if type is brought quite close to the eyes within the near point, it appears slightly diminished in size. This diminution however entirely disappears with a small artificial pupil, while the micropsia beyond the fixation point is not affected by this means. These appearances have been previously described by Ludwig[7], Panum[8], Hering[9], Stumpf[10] and Martius[11]. I will reserve their explanations till after I have described some further observations.

The apparent diminution in size is in the case of most observers, and among them myself, accompanied by an appearance of greater distance; a few on the other hand have had indefinite ideas of distance and have seen the object sometimes nearer, sometimes farther. I need hardly say that in all cases where I have asked for observations I have avoided leading questions. To myself change of distance is occasionally more obvious than change of size; after fixing a near object and then suddenly releasing accommodation I have seen an apparent approach of the distant object, and this has been especially well marked in cases where I have been attending to the question of size and have not been thinking of change of distance. The question arose whether the apparent change of distance was secondary to change of size as supposed by Förster and Aubert in their explanation of the micropsia of atropin. To determine this point I tried some experiments in which I was

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unaware of the size and distance of the object. I looked through an eye-piece at one end of a cylindrical box at a uniform grey wall; a point to be fixed was placed within the box: the point being fixed, squares of paper of various sizes were held by means of a slender holder at various distances between the box and the wall by an assistant. It soon became obvious that knowledge of the size was a very important factor in the case; in nearly all cases however the square appeared either smaller or more distant or both smaller and more distant than when fixed directly, and Mr E. T. Dixon also tried this experiment with similar results.

I will now describe the experiments with atropin. I applied a solution of atropin sulphate (2 gr. to the ounce) three times a day for four days. The appearances to be described were present during the whole time. Owing to my myopia I could see type distinctly without glasses at about 25 cm. Holding the type at this distance, I fixed the point of a pencil in front of the type and brought it nearer to the eye, making an effort to accommodate for the point. The effort was of course unsuccessful and the point of the pencil became more and more blurred as it approached the eye. At the same time the type diminished in size just as in normal vision, but owing to the absence of blurring the diminution in size was more obvious than with the normal eye till with near approach of the pencil No. 10 appeared quite as small as No. 2. With the diminution in size there was an appearance of greater distance as in the normal experiment, and the phenomenon appeared to be identical in nature with the normal micropsia beyond the fixation point, but more easily observed owing to the absence of blurring. In an emmetropic individual it is to be expected that the experiment would succeed only with distant objects, and it seems possible that one cause of the micropsia which has been observed clinically by ophthalmologists may have been a want of correspondence between a seen object and the point of fixation. Under ordinary circumstances it is a phenomenon which will only be observed if it is looked for.

Another drug with which I have experimented is eserin. This causes spasm of the ciliary muscle and with this condition objects appear increased in size. I used a solution of eserin (1 in 320) to the left eye. At the end of ten minutes, my far point was brought down to 15 cm. Type was distinctly larger to the left eye at 15 cm. and increased further in size on bringing nearer to the eye, so that No. 10 became larger than No. 12 to the right eye. Five minutes later the far point was at 10 cm., and the macropsia more marked, No. 10 to the left eye being almost as large as No. 14 to the right eye at

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the nearest point where it could be seen distinctly[1]. The macropsia began to pass off before the end of an hour and had disappeared three hours after instillation. Apparently the macropsia occurred both at the fixation point and nearer than the fixation point, but much more marked when nearer. During the first hour, however, any effort to accommodate was decidedly painful. The ordinary explanation given of this condition is on the same lines as that of micropsia; that owing to the spasm of accommodation, no effort or less effort than normal is necessary to see an object distinctly. This gives rise to an idea of greater distance and consequent appearance of greater size. I may mention here that the increase in size was very much greater than would have been due to the contraction of the pupil due to the eserin.

The explanation of micropsia beyond the fixation point is a much more difficult matter than of that at the fixation point. I have satisfied myself that it is not due to irradiation. The experiments under atropin would be sufficient to disprove this, marked micropsia occurring with effort of accommodation unaccompanied by alteration in the pupil or dioptric apparatus. This form of micropsia also occurs with a small artificial pupil and is present for a white object on a black ground as well as for black on white. The first to observe the phenomenon, Ludwig[7], was unable to suggest an explanation. Panum's[9] explanation was similar to the ordinary explanation of the micropsia of atropin. He supposed that there is an illusion of judgment having as its sensory basis the peculiar feeling of the sensation of accommodation and that the idea of nearness or farness so arising is translated by an instinctive process into a judgment of size. He suggests however the possibility "that the mode of sensation of the visual organ as regards distance is changed in an unknown and incomprehensible manner by the nerve excitation which accompanies accommodation." Stumpf's[10] view resembles very closely that of Panum. The phenomenon is also mentioned by Martius[11]. He describes an object beyond the point of fixation as shortened by perspective and he refers the phenomenon to apparent localisation at the fixation point.

More satisfactory is the explanation given by Hering[8]. He supposes that the appearance is due to a change in the mutual relations of the near and far objects. If the hand as the near object is brought nearer to the eye, the change may be perceived as an enlargement of the hand or as a diminution in

[1] Berry states (*Diseases of the Eye*, 1893, p. 24) that accommodation macropsia increases with removal of the object from the eye. My observations showed a marked increase with approach to the eye.

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size of the distant object, according to the direction of the attention to the distant or near object respectively; that when the hand is near the eyes and is yet perceived as of the same size as previously at a greater distance, the distant object will be measured by a different standard; that the retinal image will be multiplied by a smaller factor. This explanation however does not wholly meet the case. Objects beyond the fixation point may appear smaller when there is no measurable near object for comparison. Then if a sheet of paper be held before the eye and its edge fixed, a distant object will appear to diminish in size when the paper is brought nearer, although the near object has been a separating line which has not altered in size. Still more convincing is the objection that the micropsia occurs when an imaginary near point is fixed and then an effort of accommodation made for a nearer point in space.

Hering's explanation needs some modification and then seems to me to meet the case. In his theory of binocular vision Hering distinguishes between localisation relative to the fixation point and localisation of the fixation point itself, and the same distinction may be applied to monocular vision. He regards the fixation point at any moment as the centre of the visual space (*Kernpunkt des Sehraums*) at that moment. With alteration of the fixation point, the relation of a stationary object to the visual space as a whole will be altered. If a point be fixed and an object beyond be moved farther away from the eye, the object will appear more distant and smaller. If the fixed point be moved instead of the object, the object appears more distant and smaller. It is the relation of the object to the fixation point and not to the eye which determines the apparent size and distance. The retinal image has remained constant, but, as Hering says, it is multiplied by a smaller factor with greater distance from the fixation point. Similarly if the fixation point recedes from the eye, a distant object appears to have approached the eye and to have become larger; the retinal image is multiplied by a larger factor with decreased distance from the fixation point. The same holds good of objects nearer than the fixation point; it is the relation of the object to the fixation point and not to the eye which determines its apparent size and distance. It may be objected that this explanation is little more than a restatement of the facts of the case. It is however a restatement which emphasises the importance of the fixation point as the centre of the visual space and as the determining factor of the apparent relations within that space.

Further, this explanation is of interest in relation to the problem mentioned at the beginning of this paper. So far as

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localisation relation to the fixation point goes, there is no evidence that the alteration of spatial relations is in any way dependent on accommodation. It is in the localisation of the fixation point itself that this may play a part, and in this connection the atropin experiments present several points of interest. In the normal experiment, the localisation might have as its basis the sensations arising from the peripheral accommodation changes. In the atropin experiments the same phenomena appear in the absence of any peripheral accommodation, and this seems to point to the fact that the localisation of the fixation point depends altogether on central factors. Several objections may be brought forward; first, that the ciliary muscle was not completely paralysed. It is not easy to say that the power of accommodation is completely abolished, but the appearance occurred after the application of atropin for four days, and I was unable to detect the existence of any accommodation. I used fine hairs stretched across a hole in a card. I could only see the hairs clearly at one distance; vertical hairs at 25 cm., horizontal at 32 cm., and when the hairs were slightly blurred I was unable to make them distinct by any effort of accommodation. A second possible objection would be that the localisation depended on associated movements. If I had only paralysed one eye, the localisation might have been explained by contraction of the ciliary muscle of the opposite eye in the same way that G. E. Müller[13] and James[12] explain erroneous projection with paralysis of an ocular muscle. I excluded this by using the atropin to both eyes. A further possibility however is that the localisation depended on associated movements of convergence, of eyelids, etc. On making the efforts to accommodate, I experienced distinct sensations of tension referable to the eyeball and parts around as generally occur with strong accommodation effort, and it might be urged that localisation depended on sensations arising from these peripheral conditions. If this were the case, it seems unlikely that the changes of apparent size and distance associated with the effort should have been in no way lessened, and in fact even increased by removal of the share taken by the ciliary muscle. I regard these experiments as going far towards proving that the localisation of the fixation point depends on central factors, and I may record an observation which bears out this view. In trying the experiment with the normal eye, I have seen type beyond the fixation point much diminished in size but yet distinct and well defined; the accommodation apparatus must have been adapted for the type, and the micropsia due to central conditions.

The problem is from one point of view a special case of the

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general question of the sense of effort. Those who advocate its central origin usually speak of sensations of innervation or of consciousness of the outgoing impulse. The atropin experiment seems to show that the effort alone to carry out a movement may produce a sensory change of the same degree of vividness as occurs when the effort is followed by the movement.

I have throughout described micropsia beyond the fixation point as a monocular phenomenon. According to Martius it may be observed with both eyes. I think that this is the case, but the observation is not satisfactory owing to the double images. With distinct double images beyond the fixation point I have not been able to satisfy myself that micropsia occurs; certainly it does not occur to the same extent as with one eye. There is, however, a binocular phenomenon which is possibly of the same nature, *viz.* the apparent small size of the binocular image of two objects combined by converging the eyes for a point nearer than the objects. The smaller size of the combined image is in my case associated with an appearance of greater distance and the phenomenon may be regarded as an instance of micropsia beyond the fixation point. One appearance, however, which does not fit in with this view is that the lateral monocular images are not appreciably diminished in size. The apparently large size of the binocular image of two objects combined by diverging beyond the objects may also be of the same nature as the monocular phenomenon.

As regards the eserin experiments, I am inclined to regard the increase in apparent size as an example of the normal macropsia nearer than the fixation point. The whole region in which the type appeared large was well within the ordinary reading distance. It is possible that the enlargement at 15 cm., the far limit of distinct vision may have been due to the diminished size of the pupil and diminished irradiation compared with the sound eye, and it is possible that the increase in size on bringing the type nearer was directly due to the increase in the size of the retinal image, the accommodation apparatus and fixation point remaining stationary. The pain produced by any effort to accommodate rendered the observation unsatisfactory, and may also have tended to keep the fixation point beyond the object.

I have endeavoured in this paper to show that at least two kinds of micropsia may be observed as the result of the action of atropin on the eye; that one, probably that most commonly observed, is due solely to irradiation, and depends on dilatation of the pupil and not on paralysis of accommodation; that the other is a phenomenon of normal vision which may be observed

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more easily under atropin, and that this second form lends no support to the view that peripheral accommodation changes are factors in spatial perception.

It must be a matter for future investigation to determine which kind is present in the cases which have been reported clinically, and the possibility must not be neglected that micropsia may occur under atropin from causes other than those I have described.

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VI.—DISCUSSIONS.

THE 'TYPE-THEORY' OF REACTION.

In the Oct. No. of *Mind* Professor Titchener devotes some pages to a very discriminating examination of the recent 'Study' of mine in *The Psychological Review* (May, 1895) in which I stated in some detail a theory—announced some time earlier—to explain the variations shown by different reagents in the time of their reactions. His statement of the question is so full and his quotations of my statement of it so generous that I need not now do more than refer the reader to his article, or to mine, for the preliminaries. I may also waive all discussion as to the method of science in general and the nature of proof—matters of a kind that we either agree upon or would probably continue to disagree upon. All such machinery out of the way—and I cannot help thinking that Professor Titchener sometimes allows the dust of his machinery to obscure his vision—I may be allowed to state a point or two, first on his article, and afterwards on my theory.

1. The first point made is this: that I was wrong in calling the 'disposition' or '*Anlage*' view a 'theory.' That, certainly, is true; and I claim, as Professor Titchener grants my right to, that my theory goes farther, in attempting to give a psychological explanation of reaction rather than a simple statement of fact.

2. Professor Titchener's explanations regarding what he calls the *Anlage* of the reagent, and the quotations from the works of others on the same point, still seem to me, in spite of the 'four-fold root of sufficient reason' which he presents in numerical order, to be open to my original charge of *circulum in probando*. He says, first, that, in Lange's words, "there are certain persons who are incapable of reacting consistently in the sensorial or muscular way." This I not only admit, but expect as a natural circumstance, if the truth be what my theory says it is. The man of the sensory type, my case of *F*, for example, complained of just this difficulty: he found himself almost incapable of reacting in the muscular way, being a musician and a man of the auditory type. Is it better to explain this man's condition, first finding out about him all that we can, or to drive him out of the laboratory? Then, under the same heading, Professor Titchener cites Wundt's version of the same incapable man in these words: "there are individuals

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who are entirely incapable of any steady concentration of the attention." This I also admit—the asylums are full of them—and I also admit that they are better out of the laboratory. But this is a very different class from those persons described by Lange; and it is just the confusion of the two kinds of people that makes Mr Titchener's whole position a false one. I find that my case *F*, if I am patient and do not turn him out too hastily, shows a remarkable power of concentration of his attention upon sounds: he can beat all the laboratory besides at that. And in other directions his attention is very fine. He is, in fact, a high-stand man in his university-work generally. So he is in no sense one of Wundt's class who are incapable of any steady concentration of the attention. On the contrary, he can concentrate his attention splendidly, provided we allow him to do it his own way. Assuming then that Wundt stated just what he meant, I quite agree with him; provided his usage go no farther than his words. But coming to the question of usage in the Leipsic laboratory and speaking only by the book, we find these words in Professor Titchener's article in Wundt's *Studien*.

After saying that his results ought to be published: "Weil die Zahlen auf einer strengen Durchführung des zwischen den sogenannten sensoriellen und musculären Reactionen existierenden Unterschieds beruhen, und daher theils Abweichungen von den früher erhaltenen Zahlen aufweisen, theils zur Erklärung der innerhalb dieser vorhandenen Unregelmässigkeiten dienen können," he goes on to report: "Mitarbeiter in diesem Theil der Untersuchung sind neun Herrn gewesen. Sichere Resultate habe ich jedoch nur von zweien ausser mir selbst gewinnen können." (*Phil. Studien*, VIII. s. 138.)

Now, does Mr Titchener mean to say that these three alone of the nine were capable of any 'steady concentration of the attention'? If not so, then where are the six? Are the six 'incapable of introspection,' as another of Professor Titchener's authorities is quoted to have put it? I happen to know about some of the six, and can say that the average ability of the patrons of the Leipsic laboratory is not as low as this procedure would seem to indicate. So Professor Titchener is not following Wundt's formula of exclusion; he is rather following his own and Lange's formula, and by it excluding all who are 'incapable of reacting consistently in the sensorial or muscular way.' If one-third of mankind are to be taken to prove that a result is a universal principle, the rest being deliberately excluded because they cannot get the result that the one-third do, then what conclusions could not be proved in well-managed psychological laboratories? It would be interesting—indeed it would be the only possible justification of the procedure—to have the partial results which the other two-thirds did give, with the criticism of them on the ground of which they were thrown out.

3. Mr Titchener then says that my charge that the "Leipsic

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school 'rules out' results which do not accord with the Leipsic theory, but are nevertheless constant and regular results, is altogether unfounded"—quoting passages again from Leumann and Külpe to the effect that due regard should be had to individual differences among reagents. The only results ruled out, he says, 'are those which are wholly irregular and inconstant.' To this I have two replies to make. First, I may ask: if this be true, why does not Mr Titchener accept the results of Flournoy, Cattell, and myself, which show tables of cases whose reactions were as regular and constant as the Leipsic results, but which fail to show the sensorial-muscular relation which the Leipsic school believe in. I shall say a word more on this question of relative accuracy of result farther on. And second, Professor Titchener overlooks one of the essential factors in the case—the factor in the case, to wit, that relative regularity and constancy may be just the thing we are observing. Results may be *regularly irregular*: and that is just the contrary case to the one which he looks exclusively for, *i.e.*, the case of results which are *regularly regular*. In ruling out all results which are irregular, the Leipsic school beg the question. In matters of the attention it is evident that steadiness, uniformity, ease of fixation, is the opposite of hesitation, now-good-now-bad, easy-then-difficult, effects. And it is just a part of the phenomenon that my theory attempts to bring to recognition, that the case in reaction is exactly this normal and common kind of variation. Irregularity, therefore, may arise from difficulty in getting the required image or content held up for attention. And I think that the Leipsic school have to recognise and act upon the same principle as soon as they come to ask for the slightest shadow of explanation of their own distinction between the two kinds of reaction. In short, to put my position briefly on this point, I should say that irregularity of result might occur—and we actually have cases of it on each side—in either kind of reaction, and if one should determine beforehand to rule out all cases of such irregularity of the muscular kind, then he might find one-third of his cases remaining to serve as basis of a formulation *exactly the opposite* of that held by the Leipsic school.

I have, further, to thank Professor Titchener for quoting the passage from Külpe to the effect that "if a person is incapable of any vivid ideation of a sense impression, he will give the appropriate direction to his attention by the formation of a corresponding judgment, or by help of the organic sensations arising from the strain set up in the organ of sense or of movement, or perhaps by visual ideas of the stimulus or of the required movement. But it is probable that certain differences in the determination of reaction times are largely referable to the differences in the form of expectation." This is my view. It is only another way of saying that these things should be taken into account, and that all variations in individuals should be counted. Professor Flournoy's case is especially valuable as enabling us to follow up one of the variations

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which Külpe hints at; and my research into the variation between 'visual motor' and 'kinaesthetic motor' reactions is a deliberate attempt to clear up one of these distinctions. Külpe wrote in the same passage: 'so far there has been no accurate discrimination of all these forms of muscular and sensorial preparation.' How then, I may ask, can he say beforehand that the muscular form will turn out in each case to be shorter than the sensorial? One of the merits of the 'type-theory' is just that it gives us natural lines of advance along which to direct these further investigations.

4. When, therefore, Professor Titchener says that my "demand for a statement of the origin and meaning of the 'disposition' is a demand for the impossible," I have only to cite certain practical considerations to meet his views as to the intrinsic obscureness of 'nurture, of heredity and education,' as far as this topic involves those things. Is not the fact that *F* is a musician, something of an explanation of his auditive 'disposition'? Is not the fact that a man having certain defects of vision has also difficulty in giving visual attention, in so far a reason for his long visual reaction? Is there not now a mass of pathological evidence proving that movement of a limb may be impossible if visual, auditory, or other types of attention cannot be brought into play? And is not this in so far the ground of a theory of the variations which these men show when they are well? In short, is not the pathological theory which I have used in working out the 'type-theory' of reaction just a theory of the variations produced by 'nurture, heredity, and education'? But even if, theoretically, 'dispositions' are obscure, we should be sure that we have 'caught the rabbit' before we decide that he is not worth cooking; and this is the task which the 'type-theory' sets itself—to investigate the so-called 'dispositions' and find out what they really are.

Professor Titchener then goes on to examine the evidence upon which my theory rests. I may say before taking up the points which he makes, that I by no means admit the implication that I have anywhere stated all the evidence in what I may call the form of a catalogue—as he is fond of doing; on the contrary, the article he quotes is mainly the report of a research, and the general considerations are very schematic. I hope later to do more justice to the evidence as a whole. So I shall now only comment on the evidence as he states it, not as I should state it.

1. He objects to my cases on the ground that they were not tested as to their type. Now, in spite of Mr Titchener's assertion that 'there are many methods of testing type,' I may say that I do not know of any that are conclusive except those of introspection and pathology. I believe that in most cases a very safe conclusion can be reached by questioning the subject in a variety of ways, *i.e.*, by using the method of introspection. This I have done with my cases, and it is only a phase of the incompleteness of my article, when looked at from a 'catalogue' point of view, that I did not state it. Professor Titchener is quite right in asking for it; and

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later I shall furnish it. He would do psychology a service, however, if he would publish some of the 'many methods of testing type, apart from the reaction method.'

2. He says of my results: "four persons reacted to sound. Two of them, *B* and *S*, carried out the investigation of which the present 'Study' is a report: presumably, therefore, they had the type theory in mind throughout. Whether the other two reacted with or without knowledge, we are not told. The greatest reliance is placed upon the times of *B* and *S*." Of this I have again two things to say: first, that the research was carried out largely in Toronto at the time when I (*B*) still accepted the Leipsic distinction as a general one; and my present theory was arrived at only after I had subsequently secured the results reported in the table of *F*, and largely on the basis of that table, which forced me to alter my former view. This shows for itself in the tables, in both my case and that of *S*—he too had no such theory when he gave the reactions—for we are the *very two* who do not contradict the sensorial-muscular distinction! What Mr Titchener means by saying 'the greatest reliance is placed upon the times of *B* and *S*' passes my comprehension. As also any ground he may have for the unhandsome charge that I have changed my reaction-times since I wrote my book on *Senses and Intellect*. It looks to me like a case either of the extremest carelessness as to self-contradiction, or of 'bluff.' Of course I do not accuse him of the latter: but why strain to make a point which is contradicted by the table which he himself constructs out of mine? It can only deceive the non-elect. My results still show the Leipsic distinction as they always did; so do Mr Shaw's (*S*). Mine have only changed in that the distinction is less marked than it used to be; and this I go the trouble to explain in the same article as probably due to habit and practice—as my theory again seems at least not to contradict. The times of *B* and *S*, therefore, are very neutral to the discussion: that of *F* and, as far as examined, that of *T*, are the ones on which 'greatest reliance' is placed—of all which I have myself investigated.

3. Now as to accuracy of result—the point which comes up next. Professor Titchener criticises my tables as to certain results which show variation, quoting only the figures for *B* and *S*. 'These variations,' says he, 'call for special explanation.' Yes, they do; and I can give it. But as I have said, these are the two cases which have no great bearing on the discussion—a kind of citation which, if I were criticised by one whose standing I did not know, I should say showed incompetency or playing to the galleries. The two cases which are important to my argument and which go with those of other observers to prove the 'type-theory' are those of *F* and *C*, as I may again repeat. In the case of *F* the difference between the sensorial and muscular reactions is $40\,\sigma$ and in that of *C* it is $25\,\sigma$. Is it competent argumentation, in view of these figures, to say: 'Professor Baldwin argues from time-differences (22,

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18, 21 σ),' with no shadow of reference to the other cases, especially after declaring, without any accuracy, that I placed 'greatest reliance upon the times of *B* and *S*.' The only possible point in my article to which such criticism would apply is the distinction between 'visual motor' and 'kinaesthetic motor' reactions, where I do use the results of *B* and *S*. But that is quite another topic; and while to have confused the two may, in a measure, excuse Professor Titchener's error, it is, I am bound to say, most unfortunate. For in that case, how can Professor Titchener go on to say: "Nevertheless it must be admitted that the tables show some striking results, and that the construction of the type-theory out of them is very ingenious." This would seem to show that the writer of the sentence did see the bearing of the times of *F* and *C* after all, and yet did not cite them in his quotation of figures.

4. Flournoy's case. Professor Titchener gives the details of this case sufficiently. He dismisses it with these words: "All that they [*i.e.* the Leipsic school] would say is that the 'physical possibility' to react muscularly is not, in [our] laboratory experience, a feature of the normal or average mental constitution. Consequently, the mind so constituted cannot be drawn upon to furnish norms of reaction: however interesting its workings may be in other connections." This summary exclusion of cases has been spoken of above. So far from disposing of the case it shows, in my mind, the plainest confession of inability to do anything with it. It amounts to saying: 'this case was investigated; it ought not to have been investigated: the results were published; they ought to have been suppressed.'

Other cases are then taken up, *i.e.* those of Professor Cattell, from whom a letter is cited quoting his two reagents *J* and *D*. Cattell says that *D* supports the type-theory, and that *J* gives no difference between the two kinds of reaction—a fact which, of course, fails to support the Leipsic distinction. Professor Cattell then gives a case (unpublished) of a reagent who gave a slower reaction for sound than for light while distracted 'by not knowing where the sound was.' When this cause of distraction was removed 'his reaction (to sound) became much quicker and more regular.' Cattell says this case 'supports your (Titchener's) point of view'; and Professor Titchener, on the ground of this common phenomenon of distraction of attention, dismisses the evidence from Professor Cattell's cases with the phrase 'honours are divided.' Professor Cattell, on the other hand, in the same letter declares in favour of the type-theory in these words: "My own idea is that an unusual direction of the attention lengthens the reaction time, and that when the reaction has been much practised it becomes reflex." If Professor Titchener can get any comfort from the unpublished case mentioned, it is well, but to me it seems to be quite easy of explanation. The person is uncertain what he is to attend to in certain respects, and so cannot attend quickly or well; as soon,

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however, as this cause of uncertainty is removed, he can. There is no question here as between types of attention; it is rather a question of good attention and bad attention. And the result is what the type-theory says it is: with the attention bad, the reaction was long; with attention good, it was short. The case is too meagre to be of any value except as a tendency case—were it not that Professor Titchener uses it again below, forgetting all the proper demands made earlier in his paper for exact figures. As to the Donders case—it is pure surmise one way and the other; I cited it in my other paper only as showing the length that the Leipsic people are willing to go with their distinctions.

As to additional cases from which the author says I do not claim support, it is equally true that I make no reference to them, again not writing a 'catalogue': the main reason that I did not 'claim' certain other cases recorded in the literature of the topic, was that I thought the cases cited were sufficient.

So much then for the 'evidence for the type-theory.' I submit that it is strengthened by Mr Titchener's examination of it. And there is, besides, the great mass of evidence drawn from the pathology of the motor functions, and from the general principles of habit and relative accommodation of the attention, which are stated at some length in my article. All this field is untouched by the examination of our author, although it is there that—apart from the actual cases reported—I lay 'greatest reliance.'

But Mr Titchener is not yet done; he next cites 'evidence against the type-theory.' And what he cites he himself describes as 'these two negative instances'—*i.e.* of himself, and of Binet's case of M. Inaudi. As to Professor Titchener's case, as he reports it from his impressions of his own mental life, he simply shows, with quotations from my book on *Mental Development* also in support of it, that type differs in the same individual for different functions, and 'shifts' with education for the same function. Both of these points I admit; and I have put both of them in evidence in the book quoted: but how do they bear against the type-theory of reaction? They do not. The reason it is a *type*-theory is just that it allows for such variations; and it matters not whether the variation, in any case, be in a person or in a function. And indeed, the very ground of origin of types is to be found in education, which must necessarily apply to single functions. But I do not think that the little practice that one may give himself in a year or two, or in the case of one function or two, is likely to alter the general type of his reactions; that goes in most cases deeper down in the habits of one's life. This is all that Professor Titchener's case shows, and even then are we not taking very general statements for figures? Why has not Professor Titchener tested himself for type by some of his 'many methods'? He seems to forget those 'many methods' when he now says: 'the elucidation of a memory type is by no means an easy matter.'

The other case, that of M. Inaudi, is to my mind unavailable.

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Inaudi is a prodigy of mathematics, investigated by Binet and found to be dependent upon hearing in his calculations. Professor Titchener draws the inference, and it seems that Binet did also, that he should give a remarkably short auditory reaction compared with his other sensorial times. This he did not, when investigated; and so he is now cited as evidence against my theory. Of course I reply as Mr Titchener supposed I should, that this does not show anything about his muscular reaction. And further it is quite too abnormal a case to show anything about the relation of the different kinds of sensory reactions to each other. This arithmetical work on the part of such prodigies is not to be accounted for as due to habit, practice, training of the attention, &c., the usual ground of type distinctions; it is rather a variation of an obscure kind, some sort of a twist of which we know really nothing, and in it Professor Titchener ought to recognise an *Anlage* if there ever was one, and promptly rule it out of the laboratory. I quite agree with M. Binet in saying in the passage which Mr Titchener quotes: "It must not be supposed that M. Inaudi is an auditive outside of his professional exercises in calculation. He is an auditive for calculation, *i.e.*, for one partial, special, sharply defined memory." It seems to me quite likely—if this freaky calculating gift be amenable to any rules—that for this function his muscular reaction would be longer than the sensory. But for his other senses it seems to me also probable that he was reacting all the time in a muscular way. And even though M. Inaudi gave all his reactions with muscular attention as Professor Titchener supposes, how does that in any way 'tell heavily against the type-theory'? That theory does not say that no one shall react in that way if he want to. In that case one would only have to suppose that Inaudi's reactions of the two kinds to sound were about equal and both very short. This is supported by the lack of conclusive evidence that he was much more auditive than motor, even in his calculating.

After all this rather tiring discussion, in which there is on both sides too much hair-splitting, hypothetical interpretation of cases, and conjecture as to what a reagent 'ought' to do on this view or on that, I find relief in turning to one or two of the larger bearings of the subject. They may be taken to be a further statement of aspects of the general position now sufficiently well characterized by the phrase 'type-theory.' At the same time, I desire to thank Professor Titchener for the careful consideration he has given to my point of view.

1. It is not a necessary corollary from the type-theory that a subject be of the same type in his reactions with the hand to sounds, sights, &c. that he is in his speech. I think, as I said in my earlier article, that this is oftener so than not; and it was this thought that first led me to look to the general doctrine of types for an explanation of the variations in different persons' times. We find that speech itself may vary in its type very remarkably in the same individual from one language to another, especially when the

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conditions of learning have been fairly consistent and of long duration. The case described by Ballet, and my own sense of relative contrast in type as between my use of French and German[1], are instances of this. And the pathological instances of damage to the brain which incapacitates the patient from using one language while another may remain intact—together with many interesting minor variations—tend to furnish evidence in the same direction. It should not surprise us, therefore, if it should finally become evident, in any subject, that a hand-function, such, say, as hand-writing, was most readily stimulated by some other centre in the brain than that which serves for the 'cue' to speech; giving in the same person one type for writing and another for speech. I am concerned to say this here since in the same article Professor Titchener holds me somewhat strictly to the complete parallelism between speech, on the one hand, and hand-functions on the other, interpreting my statements that way—with some right to, certainly, from the partial statements of my earlier papers.

2. An important requirement, which Professor Titchener has not brought up against the type-theory, is yet to be fulfilled; and I hope to go into the consideration of it and the point mentioned immediately above when I publish the further experimental results which are accumulating in my laboratory. The requirement is this: should not any theory of the variations in the relative lengths of the two sorts of reaction in different individuals give some kind of an account of the great disproportion between the number of cases which give a shorter muscular, as against those which give a shorter sensorial, reaction-time? Professor Titchener may find it difficult to formulate such a requirement, since it would seem to commit him to the recognition of some instances of the latter. But those of us who believe in testing everybody, and in making the differences themselves fruitful data for theory, are bound to recognize the disproportion spoken of, although, for myself, I think when more laboratory workers take persons just as they come, the relative numbers will probably be more evenly adjusted.

Yet, as far as this disproportion does exist, as it appears to, I think it really bears out the analogy of reactions generally with speech. The discussions recently published on so-called 'internal speech' turn, it will be remembered, not on the question as to whether there are the same number of cases of persons sensory as motor in their speech; but rather on the question whether all men are not motor. As I have put the question elsewhere, for convenience in grouping the evidence *pro* and *con*, 'are the kinæsthetic memory centres intrinsic to speech,' or not?[2] There is a school of physiologists and psychologists, represented by Stricker of Vienna, who go so far as to deny that any persons can speak without the

[1] See my *Mental Development: Methods and Processes*, pp. 435, 461 note. Ballet's case is to be found in his *Le langage intérieur*, p. 62.

[2] *Philos. Review*, July 1893, p. 386, incorporated in *Mental Development*, Chap. XIV.

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incipient stimulation of the motor organs involved. They seem to me to be for that discussion about in the position that the Leipsic people are for the discussion of reaction. And while the case for speech seems to be going clearly against them on pathological grounds, yet they have by far the larger number of cases. The literature seems to show a great disproportion of cases in favour of the motor aphasias: and that fact has seemed to keep back the recognition of the sensory cases. Those who are familiar with the literature of aphasia will, I think, agree that the type-theory has had this obstacle to contend with. So, while I may not stop here to make good the indications now noted of the state of the facts in regard to aphasia, perhaps sufficient has been said to show that, far from being a difficulty to the type-theory of reaction that the disproportion of cases is as it is, it rather seems to extend and strengthen the analogy with the mechanism of speech.

P.S. Since writing and despatching the article above, I have received a letter from Professor James R. Angell of the University of Chicago which promises further experimental confirmation of the type-theory. He says, under date of Nov. 9, 1895: "It may interest you, in connection with Titchener's criticism of your theory for reaction time peculiarities, to know that at the very time your article appeared, I had all ready a considerable body of experiments remarkably similar to yours from which I had drawn conclusions absurdly like your own. I decided to postpone publishing until I could supplement them with more detailed work. I hope to get the thing into print before long. It seems to substantiate entirely the general *principle* underlying your view, although introducing some minor modifications."

J. MARK BALDWIN.

CAUSATION.—ITS ALLEGED UNIVERSALITY.

(1) I endeavoured to indicate in a recent paper what, as it seemed to me, were some of the transformations of meaning which the all-important word "cause" undergoes, in the course of the development of language. With regard to any such word, it is safe to take it for granted that the primary meaning is something objective and palpable. Simple acts, such as the moving of a book, or the filling of a glass, stand for us as the types of causation. The meaning of the word must therefore have travelled far before it can have come to be applied to such shadowy entities as Gravity or Affinity, which are, in the last analysis, mere expressions for the fact that the occurrence which they are said to cause will take place.

(2) How the transition comes about is traceable as follows. The type meaning is the act of a living being, not necessarily the

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conscious or intentional act. I might move a thing by accident and would still be thought of as causing its change of place quite as certainly as if I moved it with intention. The meaning here is confined to this:—that there happens the action of one thing on another, and action which, for a moment, forms to sense part of the same phenomenon with the result. As, however, most of the acts either of ourselves or others, of which we are cognizant, are conscious and intentional acts, intention soon comes to enter into the signification of the word. We think of everything that is made or done as being made or done intentionally. In intentional acts, again, there is always this feature, that they are copies of some previous act. In the intentional act, we copy an idea, and the idea again has been copied from some previous act. All intentional acts have thus the element of repetition about them. They are actions done by rule. We can obviously frame no rule ordering us to vary our action each moment, and instructing us how to vary it. The very nature of a rule is that it orders us to repeat in the future, and in other circumstances, something that has already taken place in the past. The rule for making a straight line is to continue the motion begun in the same direction, to go on repeating, as regards direction, the part first made. The kaleidoscope, by repeating any irregular figure, makes a regular one, that is, one seemingly or really constructed by rule. Our attention being now fixed on this aspect of the conception, we drop intention itself out of sight, and think of a cause as that which, whatever it is, tends to bring about action by apparent rule, action which is the repetition of uniformities. In this meaning cause approaches the signification of natural law. The original meaning of cause, however, in which there is no implication either of intention or of uniformity, still continues to be used concurrently, and it may be interchangeably, with the new meaning; and this circumstance is evidently capable of becoming a fertile source of fallacy and confusion.

(3) The doctrine of the universality of causation is often, if not ordinarily, looked upon as standing on ground which is quite impregnable. I question, however, whether, as applicable to anything but abstractions, it really stands on any ground which is more satisfactory than this, that when a thing is not caused in one sense, it is, for the most part at any rate, caused in another. Every affirmation of any characteristic as universal is *ipso facto* suspect. It is a familiar truth that as the extent of a concept widens its content diminishes, and the conclusion seems to be unavoidable that when the extent becomes universal the content must be zero. If it is the case that even legitimate extensions of the denotation thus weaken the connotation, much more is it the case that illegitimate extensions do. To take an example from the history of philosophy: Hume places the mathematical axioms in one class, the law of cause and effect in another. His followers think they will go a step further. They concur with Hume in regarding the law of cause and effect—whatever they mean by that expression—as a truth of experience

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only, but add that the axioms of mathematics are nothing more than this either. The result is, of course, to defeat their own object. If their view were accepted, it would follow that the law of cause and effect would be regarded as, at any rate, as axiomatic as the axioms, and no one could have ever contended for more than that. Similarly, if anyone propounds or accepts the opinion that all the owners of landed property are "robbers," or that all the persons in the enjoyment of independent incomes are "social parasites," "robber" and "parasite," silently and unconsciously perhaps, but none the less certainly, drop for him all their vituperatory connotation, and become "robber" and "parasite" in the Pickwickian sense only; something that innumerable good citizens are, and that all without exception desire to become. Language not based on nature depreciates in meaning as certainly as a currency not based on nature depreciates in value. Let us say that everything is unreal, that everything is illusory, and the assertion amounts to nothing for us; unless indeed it be to drag a red herring across the scent, and to prevent us from endeavouring to discriminate those elements in sense and thought which are in truth illusory or symbolic from those which are not so. If causation were, as Mill affirms it to be, true of all successive phenomena, it is hard to see how it could be anything but a synonym for succession. So, if anyone asserts that it is universal, and that such a thing as chance does not exist at all, he should make it his business, first, to show how any characteristic can be universal without becoming nugatory; and, secondly, to show how, if chance does not exist at all, it happens that we have a word for it to which we attach a very distinct and definite meaning; and how it happens that writers who deny its existence on one page have to discuss its nature and its mode of operation on the next.

(4) Suppose I throw the dice and they turn up fours, what is the cause of this conjunction taking place rather than of any other? We have made the dice regular in shape and homogeneous in substance, so as to eliminate any constant cause, that is, any cause acting by apparent rule, which would determine the fall in favour of one combination of numbers rather than of another. The cause then lies in the nature of our act, but is there, in that, any cause working by rule either actually or conceivably? The causes which determined the fall of fours this time instead of threes, as last time, were, no doubt, to be found in the difference between my actions in putting the dice into the box, in holding it, and in throwing them on the table, on this occasion, and on the former one. These differences, however, were something that then appeared for the first time in the world, and, being entirely unrecallable by memory, can never to our knowledge appear again. No rule or appearance of a rule even can possibly be applicable to them. The completest possible resemblance to the past can only assist us to guess the future, in as far as the future resembles the past. In as far as anything varies from everything in the past, it is an event towards the prediction of which even perfect experience could render us

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no assistance whatever. We have a method therefore of deciding whether any conjunction of events is subject to causation, in the sense in which causation is synonymous with law, by asking:—is it a conjunction towards the prediction of which any conceivable experience could assist us? In this case it plainly is not. The nature of the throw depends on acts which, in their salient particulars, resemble nothing in the past, and cannot anyhow be made to resemble anything, or even to approximate, in the smallest degree, towards anything in resemblance, any more closely than they do already. The fact that we can guess how many times in a hundred any special throw will occur, though a fact that is interesting in itself, is not one that in the least assists us to guess what throw will occur next time. In Meteorology, science takes it for granted that the difficulty of prediction springs out of the imperfection of our knowledge, an imperfection which it always hopes to remedy; in the doctrine of chances on the contrary, it takes it for granted that it springs out of the nature of things. If, however, the result of the throw is not determined by any cause whatever in the sense in which cause is equivalent to law, how is it, it will be asked, that we so unhesitatingly ascribe it to a cause, viz. to the particular force and direction of our throw? It is simply because, in doing so, we revert to the primary meaning of cause, the meaning which contains no thought of rule or uniformity, but comprises merely the notion of external action that dovetails into the result. If sixes turned up steadily more than once in thirty-six times, over a large number of throws, we should say there was certainly some cause for the dice falling as they did, the implication being that when nothing like this happens no cause, in our opinion, has made itself felt. If then, next moment, we assign a cause, what can be more obvious than that it is in a different sense that we assign it?

(5) To take another instance; we subject two sets of chemical elements to the same conditions; the result is, in each case, identical. When oxygen and hydrogen combine, we can be quite sure that the result will be not something very like water, which, however, varies slightly from it, in some of its properties, but that it will be water with a perfect resemblance, in all respects, to the water that we have known in the past. In the inorganic world, as far, at any rate, as the qualities of things are concerned, causation, in the sense of action guided by unvarying rule, is universal. The experience of the past, when only sufficiently complete and unerring, is a perfectly adequate guide to the prediction of the future. When Life enters on the scene, all is altered. If we put two seeds, off the same plant, into the ground and subject them, in as far as we can, to identical conditions, the result will only be closely similar but never identical, and may now and then present a very pronounced variation. The proportion between the degree of the variations and the approximation to identity in the conditions, is not such as to lead us to believe that if we could make the conditions absolutely identical the result would be identical. The contrary conclusion indeed may be taken

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as established, that even if the conditions were made identical, variations would still ensue. In as far as such variations, small or great, really vary from everything in the past, it is obvious and manifest that even omniscient experience, so long as it was experience only, could give us not the smallest assistance in guessing at their probable nature. Causation, in the sense of action by rule, ceases altogether to be applicable to them. They are, on the contrary, the source of all that is new in the world. In this case, moreover, there is no such thing as external action. Antecedent causation, therefore, cannot in any sense rightly be predicated of them. They are, so far as human knowledge goes, the acts of the organism itself, and are reducible to no rule, predictable by no experience.

(6) If there is no inherent absurdity in supposing that, at the present stage of the world's development, the history of the past would furnish data for the prediction of the remote future, then it is hard to see why there should be any absurdity in supposing that it would furnish similar data at any previous stage we choose to fix upon. Yet who would maintain that the experience of the mollusc could furnish data for predicting the instincts of the dog, or that the experience of prehistoric savages could furnish data for predicting the Herbartian psychology? The life of the future, however, may diverge, not less but infinitely more widely from anything in the present than the life of the present has diverged from that of the past. If the whole future, however, is not calculable, then even the immediate future is not calculable with precision, and the whole theory falls to the ground.

(7) The truth is, the theory very plainly confuses supernatural knowledge of the future with knowledge based on experience. Mr Mill says (*Logic*, II. p. 406) "given the motives which are present to an individual's mind, and given likewise the character and disposition of the individual, the manner in which he will act may be unerringly inferred." The fallacy lies in the words "given the character." If by the character being "given" is meant that we are supposed to know, as God alone can, how a man will act in any given circumstances, then there is nothing left to infer, and the dictum is meaningless. If by its being "given" is meant only that we have as much knowledge of it as experience of the past can give us, then there is no such thing as unerring inference with regard to it. A man who thinks that he knows his own character thoroughly is often amazed at the manner in which he finds that he acts, in unexpected circumstances. Natural law is often taken, even by accurate writers, as if it meant something that excluded variation. A truer view is that it is, like the Civil Law, "a limit of variation." As regards the phenomena of life, however, it is not a definite limit. We can say of such natural kinds as silver, or mercury, that, at certain precise temperatures, and under certain precise pressures, they are solid, or liquid, or vapour. Of such a natural kind as Man all that we can say with precision is, perhaps, that he will not be born with his head between his shoulders, or that, if his parents are pure blooded whites,

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he will not be black. At any rate, the precise statement can only be made precise by being made negative. No precise positive statement in regard to him is valid. "The fewest and simplest assumptions which being granted the whole existing order of nature would result" (Mill's *Logic*, I. p. 327) are, in addition to the laws of matter and motion, the specific nature of every past and of every present living thing.

(8) If this view of the scope of natural law diverges somewhat widely from current formulas, it must be remembered that current formulas fail to square with the possibility of anything new ever occurring in the world, and would reduce all living action to the category of mechanism, a category to which it evidently does not belong. The natural man has a healthy conviction that his action in the world is capable of having not only an apparent but a real effect in promoting or in hindering the welfare of himself, his country, or his race. He knows that what he does now will give rise to an endless series of good or evil effects in the future. It is this conviction that, in Carlyle's view, has taken shape, in the world, in the doctrine of eternal rewards and eternal punishments. The natural man will do well not to discard it as an illusion, at the instance of any metaphysical theory, without making quite sure first, that the theory is not really built on the fallacious use of one word in two senses.

(9) The world owes to the speculations of Herbart and Lotze the clear recognition of the fact that the cause in itself, and apart altogether from the effect, is never to be viewed as one thing, but always as the interaction of two. Thus while "cause" covers a wider sphere of signification than "law" in one direction, as comprising, in all instances, external action whether characterized by uniformity or not; "law" covers a wider sphere than "cause" in another direction; as being applicable to uniformities which are the result of immanent action, as well as to uniformities which are the result of external action. Mr Mill exhorts us to discard the ideas connected with the words "Agent" and "Patient" as being popular and unscientific. If, instead of discarding them, he had enquired into their significance, this truth at any rate might have been brought home to him. Hume continually speaks of the causal connection between two "objects," and Reid and Mill both discuss such a question as why we do not call night the cause of day. We cannot call night, in such a case, a cause at all, because there is no complex element in it; there is no thought of Agent and Patient, and of the interaction between the two. Mill's own account of the reason why we do not call it so, is found really to be based on this reason. We do not call it the cause of day, he thinks, because, though it is the invariable antecedent, it is not the invariable conditional antecedent. Both night and day are viewed as being together dependent on other causes. It is just as in the case of the train[1], we do not think of the front carriages as being the cause of the motion of the carriages

[1] Instanced in my paper in a previous number.

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behind, but of the motion of both as being due to a common cause, the Engine. In the relation of the engine to the train there is the thought of agent and patient and of their interaction. In the mere antecedence of one carriage to another there is no thought of the sort.

(10) Two classes of cases of interaction between agent and patient have to be broadly distinguished. In the one there is simply action *a tergo* of the agent on the patient, and there the phenomenon ends. In these the causation is self-evident; it is fully understood. As Mr Mill puts it, in referring to the connection between the sun's presence above the horizon and daylight, it is necessary. Such a case would be our type instance of the moving of a book. In another class of cases, the action of the agent on the patient is followed by a subsequent reaction springing out of the nature of the patient itself; and such cases as this form the type of truths of experience[1]. If I move a stone from a position where it is supported to one where it is unsupported, and let it go, the phenomenon does not end with my action; the stone further falls earthwards. It is to be observed, however, that every case of causation proper of the latter sort comprises a case of the former sort, as part of it. If we stop at the fact of the letting go of the stone, and exclude the thought of what follows, we have a case of the former sort. The distinction between them, in such a case, is an abstract distinction only. The one, we may view as the cause of the *event*, the other, as the cause of the *uniformity*. The two are related, in nature, as the Major and Minor premisses of the syllogism are, in reasoning. The Gravity of the stone is the Major premiss, and corresponds to the antecedent knowledge "All stones fall earthwards, if left unsupported in space." My act in letting it go corresponds to the Minor "This stone is unsupported in space"; from which the conclusion that it will fall earthwards unfailingly follows. The syllogism is, in truth, what it claims to be, the universal formula of reasoning, and not a meaningless *petitio principii*. A conclusion that belongs to the future cannot be begged by us in the present. The Minor is not to be regarded as the recitation of something for the knowledge of which we draw on Memory or authority; but as the recognition of an event that occurs, in the continual flux of things, at the very moment of its occurrence. It is to be observed, too, that it thus appears that the Minor, in cases of natural inference, must always be a singular proposition, never a universal. We cannot observe universals at a glance. The only cases in which it can be a universal are cases in which intercourse comes into play; and in which it is, perhaps, the admission of an opponent, or, at any rate, is derived, in some way, from authority, while the process of reasoning is still in progress.

[1] Science, of course, teaches us subsequently that there is always reaction on the part of the patient. For the present purpose, however, it is only what is obvious to sense that is to be taken into account.

WILLIAM W. CARLILE.

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VII.—CRITICAL NOTICES.

Mental development in the Child and the Race; methods and processes. By JAMES MARK BALDWIN, M.A., Ph.D., Stuart Professor of Psychology in Princeton University, &c. New York and London: Macmillan & Co., 1895. Pp. xi., 496.

THIS is a book which presents special difficulties to the reviewer. One looks on a biological work—for such Professor Baldwin's work seems to be quite as much as a psychological one—for arrangement, structure, organic form: in the present case one is struck almost at the first glance by the apparent absence of these attributes. And the first impression is by no means dispelled as one begins to read. One seems every now and then to be jerked off to a new topic by no means obviously connected with the subject dealt with. There is a quite perplexing amount of anticipatory allusion to later chapters, which is a pretty sure sign that there is something amiss with the order of treatment. Subjects are returned to and re-discussed with some fulness, even new definitions of terms, *e.g.* those of habit being introduced after old ones have been laid down. The reader has a sense of coming round again and again to the same topic not unlike what one experiences when following the movement of a rondo. A further difficulty in the way of seizing Prof. Baldwin's thought is his fondness—a passion one might almost call it—for new phrases. He shares with Prof. James a strong bent to metaphor. In some cases he undoubtedly introduces by these verbal inventions not only an element of freshness but an added clearness of expression; but in many others he seems rather to darken than to illumine, as when for example he employs the name 'Plastic Imitation,' so directly suggestive of art imitation, to designate the subconscious imitation of others' doings and opinions (p. 352).

To these difficulties in the way of the reviewer one must add others having more of a moral character. Prof. Baldwin is a young American, and this means that he has a good deal of go-aheadness, of impatience for ideas more than a year old. This characteristic in itself is attractive and exhilarating, especially for the slower-moving European worker. But unfortunately the eagerness to strike out a new path takes on in the present case a form which according to my experience is, to say the least, unusual in a scientific

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treatise. The author has a way of insisting on the originality of this and that idea in a way that is apt to be provoking to average human nature. And then he quotes or at least refers to his own previous writings to a quite unusual extent, and even goes so far as to quote Prof. W. James's favourable opinion of one of his ideas. This, though possibly destined to be the manner of the *Zukunftswissenschaft*, is a little trying to an old-fashioned reviewer. Even this, however, is not the worst. What is positively irritating is the appearance of a disposition to belittle the work of others, all at least except Americans who as we all cheerfully allow are just now in the foremost column of the advancing scientific army. Prof. Baldwin, to judge from his criticism of what he is pleased to call the Spencer-Bain view of the genesis of volition, has not made a very serious study of the writings of Dr Bain or of Mr Herbert Spencer. Unless I have strangely misunderstood the views of these writers they cannot be 'bunched,' to use one of the writer's graphic expressions, in the way he supposes. And each of the views, thus criticized as one theory, appears to be much nearer in certain respects to Prof. Baldwin's own doctrine than he imagines. This appearance of a hasty dismissal of others' claims is still more conspicuous elsewhere. On p. 451, for example, when touching on the theory that volition is (voluntary) attention to an idea, he refers as usual to an earlier writing of his own and also to the work of Prof. W. James, but makes no reference to the now classical article on 'Psychology' by Dr James Ward. Similarly in developing a theory of the *modus operandi* of attention strikingly similar in its essentials to Professor Wundt's well-known view, he makes no direct reference to the latter, but contents himself in a footnote with bidding the reader note a reference by Höffding to the similar doctrine of Wundt (p. 463). This and much more argues either that Prof. Baldwin is knowingly unfair, which of course I do not believe, or that he is very little in touch with doctrines which are still regarded by Europeans at least as a part of the common knowledge of psychologists.

I have felt bound to enlarge on these obstacles which the author has put in the way of a clear understanding and a fair estimate of his book; for it is quite possible that I have not surmounted them, and that the opinion of the work which I have done my best to form may turn out to involve a certain amount of misapprehension.

After defining what he considers the relation of Infant to Race Psychology Prof. Baldwin gives us what is to me the most interesting if not the most valuable part of his work, a series of chapters on child-study. He develops a 'new method' under the head of the 'Dynamogenic Method' which consists in observing the motor reactions induced by sense-stimulation. This is applied ingeniously to an enquiry into the distance and colour perceptions of children. Prof. Baldwin carried out a series of experiments on the colour-sense by presenting successively in suitable situations

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certain colours (yellow was not included) and noting the relative numbers of the grasping reactions called forth. The results are expressed as follows: "the colours range themselves in an order of attractiveness, *i.e.* blue, white, red, green and brown." The writer at once goes on to say that this confirms Binet as against Preyer (who puts blue last). But oddly enough he does not remark that whereas, as he sees, his experiments have to do with colour-preference, Preyer's have to do with *Farben-unterscheidung*. That a child will snatch at one colour more frequently than at another does not in itself show that he discriminates the former better than the latter. It may indeed be contended that *to select* a colour at all involves discrimination not only of that which is preferred but of that which is rejected. A better test of discrimination might be the placing successively a number of small coloured objects on a background of another colour of an approximately equal degree of luminosity, and calling forth manual reactions by making the coloured objects to be grasped, moveable and otherwise, as attractive as possible as a plaything. The child might previously be familiarized with the nature of the playthings when not coloured. If some such line of experiment could be followed out before the accidents of ordinary surroundings, as the mother's dress and what not, had already given an advantage to certain colour-impressions—a very difficult condition to realize—it might be possible to employ Prof. Baldwin's interesting method of investigation with good effect. But the difficulties of the problem which the author hardly seems to realize are very great and as yet quite unsurmounted.

With reference to the general value of Prof. Baldwin's observations of children it may be said that he now and again shows a real aptitude for seizing and interpreting familiar events of child-life. On the other hand the range of his observations seems by no means wide, nor does he give clear evidence of having assimilated the now considerable mass of material gathered by others. In certain cases, as when (on p. 333) he tells us that his child in her fifth month cried out when he pinched a bottle-cork, and in her 22nd week wept at the sight of a picture of a man sitting weeping, giving both observations as examples of sympathy, one feels it would have been well if the author had more fully described in each case what took place. As to knowledge of earlier work it is enough to refer to the astonishing statement on p. 317 that no 'exact observations' before his own had to his knowledge been made on the first recognition of pictures. Miss Shinn, to whose valuable memoir Prof. Baldwin elsewhere refers, has a whole series of fine observations on this point.

We may now pass to what the author would probably consider the really important constructive part of the book, the doctrine of 'suggestion' including as it would seem as its highest phase Imitation. Suggestion is defined (p. 105) as "the tendency of a sensory or an ideal state to be followed by a motor state." Prof. Baldwin does not tell us whether under *ideal state* he includes ideas of

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movements themselves, but his illustrations appear to show that he does, and this is borne out by the fact that he accepts the new view that motor presentations and ideas are essentially sensory phenomena. The truth brought out by this new name is, then, the now familiar one that sensory stimulation, as well as the ideational stimulation which succeeds and represents it, always tends to be followed by movement. Whether it was worth while to apply the name *suggestion* here may well be doubted. That word is already employed in two distinct senses in psychology, (*a*) for the reactions called forth in the hypnotized subject by a verbal or other mode of induction of certain ideas (obsessions) by a second person, and (*b*) (though less uniformly) for the reinstating part of the process of reproduction. For Prof. Baldwin's 'suggestion' we have moreover as he seems to allow the familiar names 'sensori-motor' and 'ideo-motor' action; and to both the term *reflex mental process* seems more suitable than *suggestion*.

We now come to the author's theory of development as determined by successive adaptations. All organic reactions or movements are in his view reflex or 'suggested' responsives to sensory stimulation. He rejects the notion of random or 'automatic' movements as entertained by Bain, Preyer and others. Organisms have, owing to the play of natural selection, become so constructed as to respond to beneficial stimulations, as those of food and oxygen, by expansive or advancing movements, and to hurtful stimulations by contracting or retiring movements. The author simply assumes this fact, contenting himself with a reference to the observation that certain low organisms have been observed to 'go for' light or for nutritive material, and to shrink from injurious matter. He does not attempt to establish it as a generally useful arrangement in the case of animals with differentiated sensory and motor organs. How, one may ask, can it be shown that the tendency of a stimulation of an animal by the heat and light rays of the sun to call out advancing movement would in general be beneficial to the animal? The animal cannot, it is evident, get nearer the sun by such movement, and if he could his impulse would end in the fate of the moth circling about the lamp. The best policy of such an animal, as indeed of higher creatures, might well seem to be to remain as he is for fear of losing his sunshine. Such objections may seem trivial to Prof. Baldwin, but they may suffice to show that he hardly carries out his biological speculations with that firm grip on all the pertinent facts which characterizes a Darwin.

With this biological hypothesis as a foundation Prof. Baldwin proceeds to build up the later processes of development. Movements called forth by pleasure-bringing stimulation tend to bring about a prolongation and intensification of the pleasurable sensation, and thus we get a 'circular process' of which the author makes much later on. He seems to allow that the pleasure has for its concomitant a general heightening of the current of nervous energy, and so of

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movement; and, as I understand him, the useful pleasure-continuing reactions, so far as they have to be differentiated out of the primal organic tendency to react expansively or contractively, are gradually selected out of a mass of useless ones which together constitute what the writer rather happily calls the 'excess discharge.' This is the true process of accommodation after consciousness appears on the scene. In enforcing it the author vigorously attacks Bain's idea of a selection of 'accidental' movements, the difference between him and Bain, so far as I can seize it, being that there is already at work the organic (unconscious) tendency to react with the appropriate difference of advancing and retiring movement according as the stimulation is beneficial to the organism or the opposite.

We may now pass to the author's account of Imitation which, as the highest phase of the reflex or suggestive process, underlies the whole of the true processes of volition. Prof. Baldwin describes an imitative action as "a sensori-motor reaction which finds its differentia in the single fact that it imitates." To imitate, he explains, is to reproduce that which excites the movement. Thus the reaction which issues in a prolongation of a light-stimulus is according to him a kind of imitation. All organic adaptation is thus, as he expressly tells us, a "biological or organic imitation." In conscious action we have 'conscious imitation.' Thus in the act of stretching out cold hands towards the fire I am imitating the 'copy' already in my mind as an idea: that is, apparently, I am realizing in actual sensational form the idea of warm hands. What is ordinarily called imitation is but a case of the same 'circular process' or reproduction (actualization?) of 'mental copy': for in imitating another's movement a child is merely reproducing the idea of that movement, that is, I take it, the visual representation with or without that of the arm-experience itself. Prof. Baldwin in a footnote tries to meet the rather obvious objection to so new and confusing a use of the word 'imitation': but what he says fails to convince me of the need of such violence to current distinctions. Volition in the proper sense arises out of persistent or repeated imitation, that is, a repeated effort to imitate what is seen or heard. A whole chapter illustrated with some curious diagrams is devoted to this process. The author evidently sees where the real psychological difficulty of explaining a new adaptive movement lies, and his theory that a repetition of imitative movements (as commonly understood) leads by gradual approximations to the fitting new action is skilfully argued. Ingenious as it is, however, it will hardly bear the strain he seeks to put on it. In order to support it he has in my opinion to transform the child-life which we can observe about us. To suppose that the rudiment of end-seeking action lies in imitation and in imitation only seems to me to be contradicted by only a slight acquaintance with the nursery. Where is the imitation (as commonly understood) in the child's first endeavour to improve the manner of taking his food, in his attempts to get at a rattle which has slipped away from him, and many another effort of his first

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year? In truth the writer seems himself to see that imitation is not the only, if indeed the chief source of volition, when he writes of his child "dragging a table-cloth, in her seventh month, to bring my bunch of keys within reach." "She remembers (he continues) the movements necessary and makes them voluntarily for an end—movements *she had before found out by accident*, or had seen someone else make" (pp. 427, 428; the italics are added by me).

I have postponed reference to another part of Prof. Baldwin's theory because it is in a manner independent of his main doctrine of volition, *viz.* his account of the processes of Attention and Recognition. He here follows Münsterberg in making the motor reaction the characteristic and determining factor. Accepting the doctrine that attention is motor adjustment having certain reflex or 'circular' effects on the exciting sensations or ideas, he argues with some force that we ought not to speak of any single faculty of attention. Attention, that is specialized motor reactions, appear, now as visual, now as auditory, and the several adjustive reactions vary greatly in their relative degree of perfection in different individuals. This is important, even though, as the author seems to perceive, the higher kinds of attention as exercised in thinking are largely the same process. He employs the motor theory of attention very ingeniously to explain simple assimilation or recognition as distinguished from associative recognition as illustrated in Lehmann's experiments. According to Prof. Baldwin we recognize a thing when the motor process of adjustment in attention has been perfected by practice and so grown easy. The theory—which has a superficial resemblance to Dr Ward's explanation of recognition—is a plausible one, but it will not, I think, bear detailed examination. It seems to do for tones, to the varying pitch of which distinct ear-accommodations probably answer. But I fail to see how a new taste, or a new tint, requires a process of motor adjustment different from that of an old one. Subjective observation bears this out. If only a colour is properly placed the motor adjustments necessary for seeing it distinctly are indistinguishable whether the colour be a familiar or unfamiliar one. The special muscular strain we experience in looking at a new colour arises from the circumstance that as new and unrecognized we need to get a more perfect and more prolonged impression of it. In other words the strain is the *effect* of the non-recognition and cannot therefore be its cause. One asks, too, how it comes about on this theory that we can ever recognize a thing that looks strange at first, but is recognized after a closer inspection involving considerable strain of attention. Here, surely, the ground of recognition is not in the *ease* of the motor reaction.

To sum up my impression of Prof. Baldwin's book. It seems to me in many respects fresh and stimulating. On the other hand in what looks like an over-straining after originality apparent newness of conception often turns out on closer examination to be but newness of phrasing. When new ideas are put forward one misses for the most part an impartial and thorough-going confronting of theory

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with fact. The author is evidently satisfied with the truth of his new theory: he has however a good deal yet to do in order to make it convincing to others.

JAMES SULLY.

Die Urtheilsfunction. Eine psychologische und erkenntniskritische Untersuchung. Von WILHELM JERUSALEM. Wien und Leipzig: W. Braumüller, 1895. Pp. 269.

THE author starts with a consideration of the meaning and importance, from the psychological, logical, grammatical and philosophical points of view, of the question, What is Judgment?

With regard to the grammatical reference, that bears chiefly on the relation between thought and language—from the logical point of view as expressly explained by Mr Jerusalem, living flexible judgments have to be reduced to a rigid connexion of concepts. The author's view of the philosophical place of the doctrine of judgment is discussed at the beginning and end of the book, and its importance strongly emphasized.

But the bulk of the work is devoted to what the writer regards as the psychological view of judgment—his expressed intention is to furnish "a thorough psychological analysis of the cognitive function."

In part of this investigation—the part which is distinguished as *analytic* rather than *genetic* or *biological*[1], the exceedingly close connexion between Logic and Psychology, and the difficulty of everywhere drawing a sharp line between them comes out very strikingly; for we are given what purports to be an *absolutely general* account of Judgment—an account, *i.e.*, which will and does apply to every judgment without exception, when rigidly analysed. This analysis is of course psychological, and it appears to me that it is judgments as thus understood that are the subject and centre of Logic. If there is an absolutely general account of judgments, on that, it would seem, Logic must rest, and with that it must begin. Although the author, to judge from some of his statements, is not in harmony with this view, it is apparently involved in his opinion that on a complete and satisfactory answer to the (psychological) question What do we do when we judge? depends our whole theoretical view of the world, and that whatever is essential to judgment must hold of every content of judgment. Part of this view seems to me true and important—and it is involved in Mill's account of the Import of Propositions, according to which, for a due analysis, there are two questions which have to be answered (1) What do the Terms stand for? (2) What is the relation

[1] Meaning by *biological* the point of view from which the psychology of judgment has to investigate the significance of the form of judgment in regard to the preservation of the individual and the race.

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between the Terms? If we *so far* know what the Terms stand for as to know what the relation between them is, we must also know (as in this book is pointed out) what is the essential constitution of the object of knowledge.

Mr Jerusalem holds that in every (categorical) Judgment some content present to the mind is moulded, systematized and articulated, and thus reduced from indetermination and chaos to system and intelligibility. This is accomplished by help of the idea of Force and Manifestation—the Subject standing for a Centre of Force and the Predicate expressing some manifestation of that force. He undertakes a brief historico-critical review of the doctrines of other logicians concerning judgments, supports his own by a detailed analytic and genetic discussion, and tests it by a critical and comparative application to different kinds of judgment or proposition; finally, after discussing the general trustworthiness of judgment, he takes up the philosophical aspect of the question.

Passing over the interesting references to Greek and Scholastic doctrines, and a brief account of the modern theories of judgment, it may be noted that current theories are grouped under four heads: (1) *Judgment is a belief*—here Mill and other English thinkers, and Brentano's 'Idio-genetic' doctrine are criticised. (2) *Judgment is a synthesis.* Under this head Sigwart comes. (3) *Judgment is an analysis.* Wundt and Erdmann are mentioned as exponents of this view. (4) *In Judgment a presented or ideated content receives form and objectification.* This of course, as far as it goes, is the author's own view.

With regard to what is said about Mill under the first head, it seems to be ignored or forgotten that he has discussed the Import of Propositions at great length in his *Logic*, Book I. and elsewhere, and has declared (among other things) that "the object of belief in a proposition when it asserts anything more than the meaning of words is generally...either the co-existence or the sequence of two phenomena." This (and other expressions of his view) seems to bring Mill's doctrine naturally under the head of synthesis. And of this 2nd doctrine it may be observed that at least it gives the true account of the matter from the point of view of audience—hearer or reader; and this suggests the further remark that much controversy as to the import of propositions or judgments may be explained by the consideration that it is from different points of view that different theories have been hit upon and elaborated. The author himself observes that the process of apprehending communicated judgments is synthetic (*cf.* ch. 7 of Pt. 4) but he only mentions it cursorily. We may begin with unity and differentiate or articulate it (as the author), or begin with diversity and unify or connect (as Sigwart), or fully recognise the diversity in unity—as in all items of Knowledge that already form part of our "mental furniture." The unity in diversity, or diversity in unity is common to all cases.—The 3rd view is hardly incompatible with the 4th.

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As regards the theory of Judgment affected by Brentano and his school—which Mr Jerusalem, after Hillebrand, calls *Idio-genetic*—our author concludes that the view is based upon tautology. According to this view judgment is an unique and primitive psychical act (hence the name Idio-genetic) incapable of analysis. In every judgment there is one thing or group which is referred to, and which constitutes the *Materie* of that judgment; the object before the mind in ideating and in judging is the same, in perceiving *S P* and in judging *S is P*, the same identical thing or group is the object of my mental activity—though there is a profound difference between ideating and judging. Judgments or propositions are not formed by putting two ideas together and a judgment need not be two-membered. Judging consists merely in the acceptance or rejection (*Anerkennung* or *Verwerfung*) of a presented content—thus *This plant* is a judgment.—Mr Jerusalem allows that in ideating and in judging *one* object or group is before the mind; and this certainly seems to be indisputable in the case of judgments already accepted (however acquired), and in most cases where a judgment is framed by the speaker himself. He strenuously objects, however, to the doctrine that judgments need not be two-membered. According to him all that we learn from the expositions of Brentano and his school may be summed up in the phrases, An affirmative judgment (= acceptance of an object) is true when its object exists, and An object exists when the judgment which accepts it is true. The acceptance and rejection declared to be the functions of judgment are meaningless unless *to accept* means *to regard as existent*, and to *reject* means *to regard as non-existent*.

Under the 4th head Mr Jerusalem refers to G. Gerber as his source of inspiration, and lays stress upon Gerber's view of the enormous importance of verbal language for the development of Judgment and of Thought generally. He also mentions with approval Mr Bradley's view of judgment, which however seems to me very different from his own, although recognising the forming and objectifying action of judgment.

On passing to the genetic investigation of judgment, we find important parts assigned to Ideation or Presentation, to Feeling, to Will, and to Speech. Some idea or presentation is a primary condition of judgment, but judgment is not an association of ideas; nor is verbal expression, nor even mere disintegrating of the presented content, sufficient to constitute judgment. It is by systematisation and objectification that idea is transformed into judgment. When an idea is presented to us in perception, we are passive and affected; when we think (as in judging) we are active—hence judging includes elements of volition and of passive feeling. It is interest in some presented content that stirs us up to the activity of judging—and this interest may be described as connected with the satisfaction of an intellectual need of activity—a need however which is occasionally satisfied by mere apprehension of an idea. The need would be likely to make itself felt, at early

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stages of human development, as an urgent demand for light upon some confused and perplexing presentation or idea, and this demand would find in judgment its natural and only satisfaction. Mr Jerusalem regards the seeking for this form as an act of Will, which aims at reducing the ideational content, with a view to practical ends.—For primitive man, when activity or any manifestation was attributed to any thing, the thing was always regarded (as by children) as a living willing creature. This is explained as due to the predominant force of the Will-apperception mass.—This primitive mythological anthropomorphism, generally regarded as a passing phase, is held by Mr Jerusalem to be of extraordinary interest and suggestiveness, and quite impossible to get rid of altogether.

The attribution of life and will to things is regarded as a result of man's own individual experience, in which it perpetually happens that movements follow directly on impulse or even seem simultaneous with it. The connexion (according to Mr Jerusalem) is so intimate that impulse and movement are essentially one, impulse being but the beginning of movement, and being in fact matter of consciousness only when the movement has begun. He rejects the view that feelings of innervation precede movement, but holds that muscular sensations actually accompany the *idea* of intended movement,—and holds that movement in foreign bodies was naturally regarded by primitive man as the final term of a series the beginning of which had to be sought *within* the moving thing, and had to be conceived by him as volitional impulse. To this may be added a consideration of man's 'biological' interest in his environment, the importance to him for practical purposes of a knowledge of things, especially moving things—the frequent need of communicating information as to observed movements, and the appropriateness for this of imitation in many cases; such imitation would be a convincing demonstration of the dependence of the movement upon conscious impulse.

In such a separation of the movement and assigning of it, as the result of volitional impulse to the thing moving, we have the *schema* of judgment, and an intelligible interpretation and systematisation of the whole presented content.

By this interpretation of what is perceived into an independent thing with a will of its own, the ideational content is objectified.

So far thought might progress without language; but the complete development of the function of judgment, the conception of Quality or Potential Force, the substitution of the idea of centres and manifestations of force for the crude original anthropomorphism, the clear distinction betwen Subject and Predicate in judgment, the conception of classes of things endowed with similar forces—all this, with its enormous influence on the further development of thought and power of apprehending the world, was possible only by means of language.

The question as to the origin of speech cannot of course receive a detailed answer, but it seems probable that its origin is to be

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sought in emotional expression, its further development in the need to understand. Emotional outcries would contain some intellectual elements, and would be understood; the emotional element would, with repetition, fall into the background, while the ideational factor would proportionally gain in strength. The earliest words or roots had comprehensive signification, and only in course of time became split up or differentiated into nouns and verbs. Language could become a complete instrument of thought only when the distinction of Subject and Predicate in Judgment became clearly marked. The feeling-element of Interest pervades all judgment, and judgment is in itself pleasant, according to our author.

After tracing the origin and development of Judgment, he goes on to consider the different forms of Judgment in what he regards as the evolutional order of their appearance, testing his theory by applying it in turn to Denominative and Impersonal Judgments, to Judgments of Memory and Expectation, to Conceptual, Relational, and Psychical Judgments. He points out that Subject and Predicate in a Proposition are not independent ideas or presentations but closely connected factors of judgment,—the real unit of thought being thus expressed not in a mere name as such, but in a proposition. The analysis however of propositions into *S* and *P* seems indispensable for the due development of thought (as reduction of words to letters is indispensable philologically) and the clear recognition of the function of the Subject in Predication has an important effect in emphasizing and enhancing the independence attributed to objects of Perception. It is also by its means that the idea of potential activity, so valuable in thought, is developed and fixed; and through it again words acquire universality of meaning, making it possible for objects to be thought of in groups. And thus the way is prepared for the formation of Concepts or 'Abstract Ideas.' (I should like to remark here that it seems very difficult to draw the line between Concepts and other ideas, and that we think even of individual objects by means of ideas that are more or less abstract.)

In passing to consider the so-called Impersonal Judgments, it is first of all pointed out that the Predicate as such is always dependent. It is thus incompatible with the nature of the Judgment-function that a judgment should consist of a Predicate only. But it has been thought that such judgments occur in 'Impersonal' judgments—*e.g.* It rains. Has this sentence a Subject? If so, what is it?—The author first considers the views of Miklosich, Brentano, Sigwart &c., contending that the doctrine of Brentano and his school (according to whom Impersonal Judgments are to be interpreted as Existential) is full of confusion and contradiction; and he points out that (1) *It rains* has a different meaning from (2) *Rain is*, (1) containing an implication of *present* fact which (2) does not; also that Existential Judgments are never Judgments of Perception—hence that such propositions as *It rains* cannot be Existential Judgments.—Further on, in considering these

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latter Judgments, the author points out that they are two-membered, and that in them Existence is the Predicate.

According to Mr Jerusalem the true force of Impersonal Judgments is to be found in this, that they express a whole process, not that something perceived is named. And the emphatic *Present* of Impersonal Judgments of Perception refers to the spatial environment of the speaker, and it is this environment which is the subject of the assertion. Lotze, Prantl, Bergmann, Schuppe, seem to be of a similar opinion. Thus in Impersonals too, the forming and articulating function of the judgment-act is operative. A process is therein apprehended as a condition of the environment of the speaker. This environment is at first anthropomorphically regarded as *cause* of the process. But soon the anthropomorphism disappears, or keeps its place by the substitution of a Divinity as cause, instead of the environment.—I think it might be suggested that the 'It' of such Impersonals as *It rains*, indicates that while an occurrence is taking place which we regard as the activity of *something*, what that *something* is, is vague, doubtful or indefinite.

In Judgments of Expectation the Future is regarded as existing in germ in the Present. In the present inheres the will, the tendency, the inclination to the future manifestation—we ascribe *e.g.* to an object of present perception a definite tendency, a direction of Will. The verbal expression for this direction of Will is the Future, which in many languages is simply characterised by the verb *to will*.

Ideas of Relation furnish a special class of Concepts and Conceptual Judgments. As Mr Jerusalem remarks, Relative Judgments properly so-called (of which Judgments of Quantity and Number are highly important cases) have received a very scanty measure of attention in most logical text-books—though of course the whole primary force and essential distinction of propositions of this kind falls into the background if they are treated as mere examples of *S is P*. Though *e.g.* $x = 4$ *may* be interpreted as meaning It is a property of x that it is equivalent to 4, yet without doubt what is really emphatic in $x = 4$ as ordinarily used is the *Relation of Equality* between the two magnitudes. (As has been pointed out by some previous writers, we are in such propositions concerned with *two* distinct objects or denotations.) Hence it is concluded that the Subject of such a judgment is the relation of Equality between the two magnitudes, and the Predicate is the Existence, the *Vorhandensein*, of this relation. And since Existence means nothing but potential or actual activity, the real meaning of the proposition is, This Relation of Equality between x and 4 will show itself operative in all the succeeding operations.

This interpretation seems to me somewhat strained.

Judgments concerning Psychical phenomena are said to be at first sight in direct contradiction with the author's theory, since in statements like *I rejoice*, *I am afraid*, *I am in pain*, the Force-centre which stands for Subject is certainly not distinct from, and

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independent of the person judging; it seems, we are told, as though in such cases the Force-centre were not objective, but the very essence of Subjectivity. But this objection is of a very harmless character, and it is easy for the author to show that my 'I' though of course for myself 'subjective' is from an universal point of view and for other I's 'objective'—those other I's being objective to me, while subjective each to itself. Thus in these cases too the function of judgment is to form and objectify a given content. But though each 'Subject' is able from the universal point of view to regard himself as just a part of the world, there remains the little *Unbequemlichkeit*—to use Kant's word—about the relation of the Self-cognising to the Self-cognised—and this is not removed by the author's statement that the 'I' and the 'rejoice' in *I rejoice*, signify only the I-concept and the joy-concept. The author's use of the terms *subjective* and *objective* here, seems wanting in clearness. And the relation between the interpretation here put upon Psychical Judgments and the doctrine asserted in ch. 2 of Pt. I. that "absence of substratum" (*Substratlosigkeit*) is the distinguishing characteristic of psychical phenomena (*cf.* also what is said further on in this chapter about Psychical Judgments) seems to stand in need of elucidation.

The function of Judgment is said to be physically conditioned as regards both Sensation and Volition; and that we interpret the world as we do is due to the constitution of the objective physical world itself as well as to the special character of our psychical life. Further the Categories of Substance and Cause are declared to be implicit in every Judgment, and the idea of Substance coeval with the idea of Subject of Judgment. It is because in Judgment we transfer to our environment the causal connexion which we subjectively experience, that we are enabled to foretell and to produce changes of physical occurrence.

With regard to the theory of Judgment here set forth, I am inclined to think that present divergence from the anthropomorphism assumed to start with is considerably greater than the author believes—that though Force, Substance and so on are indeed found on reflection to be ultimately implied in Judgment, yet that this implication is in many instances very far from being obvious, and that what alone is in all cases of judgment both indispensable to any significance whatever, and obvious without a process of reasoning, is unity in diversity. If this view of judgment is accepted, then every Subject of a proposition, and therefore every object of knowledge, is a unity which has a plurality of attributes.

As regards the origin of the ideas of Substance and Cause, the question of real interest and difficulty of course is, *How* are they given in experience? and Mr Jerusalem's account of the matter does not solve the problem.—There seems great force in his opinion that the form of judgment which is of general use and value must correspond to the physical constitution of things as well as to the mental, though his contention that *nothing* which appears to us is

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mere appearance but always some real aspect of the world seems valueless—because if we take the circumstances of the percipient into account as well as of the perceived, the assertion though undoubtedly true is trivial, if what is meant is that in all perception objectively correct knowledge of the matter of perception is obtained, this seems clearly inadmissible.

The author feels strongly that neither the physical nor the psychical element in experience can be given up or explained away, and he accepts as most in accordance with observed fact and most satisfactory philosophically the belated doctrine of the direct interaction of Mind and Matter. He asserts this repeatedly and in set terms, referring to Will and Movement as psychical and physical factors respectively—we start with the Will of which we are conscious in ourselves, and are led to accept a Divine Will as the *fons et origo* of force where conscious impulse seems lacking, and as providing the unification and source of all phenomena.

This final outcome and chief point of Mr Jerusalem's theory is however but barely indicated and very slightly elaborated—Leaving out of account the difficulties of the relation between Mind and Matter, it may be said that the complete failure to meet—indeed perhaps even to recognise—the problem which may be indicated as that of "the One and the Many" marks this as an entirely inadequate theory of the universe. And there seems a serious difficulty about the relation of Will to Mind and Matter, and about the Meaning to be attached to Will; for since it is through the attribution of Will, or as Force-centres, that objectification is induced upon the matter of external perception, and since it is in virtue of this objectification that we recognize Substance and Causality in the physical world, and since our only direct experience of Causality or Will or Force is said to be in ourselves: I suppose the only meaning that can be given to the denial of any substrate or substance in *psychical* phenomena is, that the one sole substance is Will, and that that Will is God, in whom (or which) physical and psychical are all conjoined and co-ordinate. On the other hand it has been clearly indicated that Will is regarded as psychical—and again, much of what is said tends to the exaltation of the physical in comparison of the psychical.

Mr Jerusalem's chief strength seems to lie in his powers of exposition and of psychological observation and imagination; and whatever may be thought of his metaphysical opinions, the interest and value of much of the psychological part of his work, both analytic and genetic, cannot I think, be doubted. The book as a whole is delightful reading, and full of freshness and suggestion. Even some views and statements which seem to me mistaken are probably in part due to keenness of analysis and truth of observation—for instance the distinction of psychological phenomena as *substratlos*, and the refusal to regard such phenomena as the subject of judgment in the same way as material phenomena.

It is about the account of the relation between Body and

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Mind that the chief faults of the book seem to gather; *e.g.* the doctrine of the direct interaction of Body and Mind, as deduced from the experienced juxtaposition of impulse and movement: the view that *mere events* (what does *event* mean?) can affect Force-centres: and the distinction drawn between psychical and physical phenomena as regards their relation to apprehension and to judgment.—It appears to me that from the psychological point of view, judgments of psychical and of physical fact are on just the same footing, and that there is no essential difference between the modes of apprehension in the two cases, except in the case of Pleasure and Pain. In our present stage of development, physical facts are surely, very often at least, matter of intuition—as far as consciousness goes; and if I say, *e.g. I am in a great hurry*, or *I am going to London to-morrow*, is not this Subject—I, as immediately referred to, as distinct from the Predicate, and as definite a Force-Centre, as any Subject of a Judgment concerning physical objects? And is not the Substance of physical objects, as distinct from their attributes, an inference?—It may be said that there is no appeal from a man's consciousness of his own states, but perhaps even this is not always true; and if it is, it is equally true (as far as *Perception* goes) of the perception of physical objects.

I have not attempted to consider Part 5, concerning the Validity of Judgment, and ch. 1 and 2 of Part 6, in which are discussed the relation between Psychology and Theory of Knowledge, Critical Idealism, and a work of Avenarius. I have also left untouched various special points of importance.

E. E. C. JONES.

L'Année philosophique. Publiée sous la Direction de F. PILLON. Paris: Félix Alcan, 1895. Pp. 321.

I. *Étude philosophique sur la doctrine de saint Paul* (Renouvier).

THE Apostle's religious ideal of faith, hope and charity is explained by M. Renouvier with force and clearness, in a study which possesses much didactic value. But when one frees himself from the charm of style and from the power of religious appeal, the question of the strictly philosophic worth of the article arises. That man lieth in wickedness, and that an escape can only be found by union with a higher power through love or charity (ἀγάπη), is urged with eloquence, but this is scarcely the ethical point of view. The sin of humanity was a state to be *remedied* according to St Paul: according to the ethical thinker it is to be *explained* so as to satisfy the reason. M. Renouvier is scrupulously just in showing that St Paul was uninfluenced by the Neo-Platonic ideas adopted by early Christianity, and his criticism tends to prove that the Apostle shut himself out from the philosophic point of view. To him all philosophy was vanity compared with

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the cry of the heart for redemption and freedom from its load of sin; and everything in his teaching is subordinated to the religious sentiment. Hence anyone who realizes the full import of the term philosophy recognises that the two points of view are widely separated; and it is precisely St Paul's steady avoidance of metaphysical problems, that enables him to inculcate his precepts of morality. His teaching is wholly didactic; it aims primarily at making men better; whereas speculative ethics can only hope to solve the problems the religious teacher avoids, and possibly, indirectly, to influence men's actions by pointing to a high Ethical ideal.

II. *Le Phénoménisme neutre* (L. Dauriac).

M. Dauriac's article deals with *L'Idée du Phénomène* by M. Boirac, which has already been noticed in *Mind*, so that it only remains to estimate its importance from the point of view taken by M. Dauriac in *L'Année Philosophique*. M. Dauriac lays great stress upon the fact that M. Boirac is a convert from the school of Kantian criticists, and he is ready to receive the deserter with open arms. But one must ask to what "school" or mode of thought has M. Boirac been converted, and it evidently grieves the friendly critic that he cannot reply to Empiricism, only to Phenomenalism, or the theory that only Phenomena can be known. This Phenomenalism, moreover, according to M. Dauriac is "neutral," or in other words it takes no side in the discussion of metaphysical questions; in fact M. Boirac gives free choice between the conclusions of Hume and Renouvier. Further, not being an avowed Empiricist, he cannot adopt the method of Mill, and "Phenomenalism" is to be established, not by observation and experiment, but by a historical criticism of preceding systems; in the course of which survey the noumenon appended to each is discovered to be either useless or self-contradictory. Phenomena, then, being isolated, have the whole metaphysical world before them—to conquer or at least to defy. Being unwilling to accept the aid of any recognised system, they are metaphysical derelicts until M. Dauriac takes them in tow towards the natural haven of Empiricism. Although M. Boirac has been careful not to commit himself, it is not difficult to see that this line of thought has influenced his speculation throughout. "The only realities that can be known," he writes, "are phenomena, and relations, more or less constant, between phenomena, of resemblance, difference, co-existence and succession." However much he may desire to be "neutral" he writes from the empirical standpoint; and having, by this means, made sure of his phenomena, he can well afford to profess to leave the question open; when, so far as he himself is concerned, it is already decided. Indeed, one side of the controversy over phenomena reminds one of an old-fashioned cookery recipe for hare-soup, which begins with the sage advice,

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"first catch a hare," and similarly in philosophy the whole question turns upon how one "catches" his phenomenon. If the phenomena are to be taken as "ready-made," the question of workmanship cannot be investigated; and if, moreover, the relationships between them are only "more or less constant," there is no place for universality, necessity or absolute knowledge, which would find sorry comfort in any dictum that includes a "more or less." Plainly then M. Boirac favours the Empirical line of thought, and it only remains to estimate how far he has improved its position by his advocacy.

From the point of view of M. Boirac, the difficulty is to individualize his phenomenalism. With Mill and the strictly "Psychological School," it was often a puzzle to *generalise* without interpolating elements foreign to those employed in the genesis of the individual, and here M. Boirac has recourse (for the present) to a kind of phenomenal Monadology. But the experiment is neither clear nor happy, for it is difficult to see how Monadism can be adapted to Phenomenalism, since the combination must unite two utterly heterogeneous elements. The doctrine of substance is the especial *bête noir* of the phenomenalist, and yet it is precisely this theory that is the kernel of the Monadology—if the system of Leibnitz be phenomenalized it fails to help M. Boirac in discovering an individual phenomenon or in finding a consciousness, and upon the other hand it can only help him by destroying the essentially phenomenalistic character of his teaching—there is no Monadism *without* substance, there is no Phenomenalism *with* substance. In fact, the problem of consciousness is a stumbling-block to M. Boirac; for how is it to be related to Phenomena? Without some kind of consciousness there can be no phenomenon; with consciousness, as an added ingredient, Phenomenalism is liable to be forced back to the provisional Idealism of Mill or the Empirical Idealism of Berkeley, and thus *ipso facto* ceases to be Phenomenalism.

It therefore appears that the position of neutrality is untenable. It is an armed neutrality with too many interests at stake to maintain indifference for long. The whole series of what M. Dauriac terms "the *isms* of metaphysics" are drawing it in one direction (even if only as objects of belief), and it is really the force exerted by these, reacting against the Empirical results, that produces an illusory appearance of apparent stability or neutrality. If Phenomena, that can be known, gain the day against Noumena, that are only believed, the result will probably be scepticism: if, on the contrary, the beliefs or possible beliefs are victors, they will break through the cordon of phenomenalism and establish a dogmatic system beyond.

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III. *L'Évolution de l'Idéalisme au* XVIII^e *siècle—Spinozisme et Malebranchisme* (F. PILLON).

It is little wonder that Spinoza's system remained so long misunderstood, when, even to the present day, there are many points that constitute an open field, where the last champion only holds his ground until a fresh challenger appears. No question has been more debated than the relation of Substance to the Attributes, and of the Attributes to each other. Every writer of an important History of Philosophy has a new theory to advance, and now the primacy of "Thought" maintained by Erdmann is answered by M. Pillon's counter-claim in favour of "Extension."

M. Pillon belongs to the more subtle commentators of Spinoza, who admit that Spinoza himself held the equilibrium of the Attributes, but that unconsciously or implicitly he loads his balance in favour of one of them, in this case of Extension. "Despite," M. Pillon writes, "this demonstration of the reciprocal independence of the two series [*e.g. Ethics*, III. Prop. 2 and Note] it remains that the representative series [thought], just because it is representative, is subordinated to the series represented" [extension] (p. 144). This is, in brief form, the argument for the primacy of Extension; but, condensed as the argument is, it contains several implied statements, that admit of discussion, if not of denial. First, is "that which is represented" prior to that which represents? For if this be so, how can the mode of extension be "logically prior" to the mode of thought, and how can the latter *represent*? for, surely representing implies activity, (and here M. Pillon's exposition is in accord with Spinoza, for the ideas are active processes, *Ethics*, II. p. 43), and that which is represented must be logically *subsequent* to the act of representing (just as the result of action is subsequent to the action), hence, what was logically prior, has become logically posterior, to Thought. Or to put the matter briefly—M. Pillon asserts that the represented must be prior to the representing, but why not, on the contrary, the representing to the represented, the act to its result, idea to ideatum? Thus M. Pillon's argument tends rather to undermine than to establish his conclusion. But a deeper question remains; how far is he justified in introducing the question of "representing" into the discussion? The following are the passages where this point of view is developed—After the definition of adequate and inadequate ideas, the argument continues, "Adequate ideas cannot but be true, because they *represent exactly* the real being which corresponds to them. Error arises from inadequate ideas, *imperfectly representative*" (p. 136). "Everything in the psychology of Spinoza returns and is reducible to this simple distinction between adequate and inadequate ideas" (p. 137). "In the study of this psychology one is struck with the extreme importance assumed by the representative character of the attribute Thought" (p. 138). "Thought is reduced to ideas, and ideas only differ in the inequality of their representative value" (*ibid.*). "Spinoza at once admits,

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that the conceptions of our intelligence, provided they are clear and distinct, *represent the truth infallibly;* in other words, that the human understanding is a *species of mirror, where clear and distinct conceptions form images exactly like* real objects. Hence the philosophy of Spinoza cannot but be a realistic dogmatism" (p. 139). Now if the reader follows M. Pillon's train of thought, he will see that the representative value of adequate ideas, in the first passage quoted, refers to "real being," and that at the end it takes on the additional meaning of a mirroring of images "exactly like real objects"—a transition from the guarantee of truth to the conformity of ideas in consciousness to that which is beyond consciousness and that never can appear in it. Now Spinoza himself decides against the second interpretation, when he looks upon the comparison of an idea to a "painting upon panel" as an absurd suggestion, and this simile gains additional weight from the fact that the Dutch and Flemish Schools of his time alone aimed at reproducing real objects as they were.

But, further, the introduction of "representation" seems to misrepresent the whole outlook of Spinoza. He himself expressly denies that the test of an adequate idea is the agreement of idea and ideatum (*Ethics*, II. Def. 4, Prop. 5 &c. and confirmed in Letter LXVIII B.) and hence, as pointed out by Prof. Windelband, an adequate idea by no means depends upon its ideatum—indeed, if this were so, the isolation of the attributes would be broken; they would be connected together and therefore false to their definition, being conceived not each *per se* but *per aliud* (*i.e.* by the modes of the other attribute). Moreover, the whole gist of Spinoza's system consists in the postulate or assumption, that what is clearly and distinctly conceived in an idea is so in being. This is the highest verity, the identity of being and thought (in the sense of an adequate idea), and obviously it could gain nothing from any representative nexus or order between the two series; in fact, to disavow this position in favour of the primacy of Extension would be to undermine the whole doctrine of Substance.

While dissenting from M. Pillon's argument, there is much to be said for his conclusion, with the qualification that, instead of a categorical, it should form one side of a disjunctive proposition. Spinoza himself intended to maintain the equilibrium of the Attributes, but when a system proposes a Substance as the sole infinite existence, and when the finite modes are grouped under two independent attributes that are connected with the finitude of the modes upon one side, and with the infinity of Substance upon the other, it is obvious that chasms must occur and that some sacrifice must be made to bridge the gulf. This sacrifice may take the shape of subordinating either attribute to the other—Extension to Thought or Thought to Extension—and M. Pillon's position is of great value in pointing out the possibility of the latter attitude. The subordination of Extension to Thought has found many advocates from Tschirnhausen to the

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present day. But, like the opposite course, neither absolutely excludes the other; both are historically possible. As long as Spinoza had not emancipated himself from his earlier point of view, he himself gives precedence to Extension, and, according to Dr Martineau, he must still give it, as long as he is engaged with the Occasionalistic problem of the relation of mind and body[1]. When, moreover, the question of the representative value of thought arose, and thinkers demanded something beyond the essence of an idea as the test of truth, the current might (as M. Pillon indicates) set in the same direction. Upon the other hand, the activity of thought as idea, the idea of an idea, the insight of "intellect" into substance (whether intellect be understood as mind the mode, or infinite intellect), all show the opposite tendency. Indeed, the balance of the attributes seems to have been the result of a balance of two opposite tendencies in Spinoza's own mind, the earlier dominance of Naturalism giving way to the deductive rights of thought, and it would be interesting to learn whether "Thought" would have asserted itself against Extension, if Spinoza had lived to answer the questions which he puts aside, for further consideration, in his correspondence.

If then the view be defensible, that an Idealistic or Materialistic conclusion can be drawn from Spinoza, it brings us to one of the most interesting, if not the most interesting problem in the history of Modern Philosophy before Kant. Did space permit, it would be easy to determine how the Greek conception of man was broken into two separate momenta, one of which appears in the empirical method of Bacon and the other in the rationalism of Descartes. Like two streams that issue from the same water-shed, the earlier courses are not far apart, but the difference increases until at last each empties itself upon opposite sides of a continent. So Materialism may be traced back to Bacon and early Idealism to Descartes. In the earlier stage Bacon leads to Locke, and Descartes to Spinoza. From what has already been said, either Idealistic or Materialistic tendencies might have originated from Spinoza, and the same remark applies, with certainty, to Locke. There were thus four courses open, deductive Idealism and Materialism derived from Spinoza, and empirical Idealism and Materialism derived from Locke. Now the problem of historical interest arises, why is it that the empirical line of thought, in both branches, ousts its rivals from the course of philosophic development? French Materialism and Berkeley's Idealism were both derived from Locke, but Spinoza's doctrine failed to gain the modifications of which it was susceptible. It is futile to reply that Spinoza's thought was more difficult and less attractive than that of Locke, for the tinge of mysticism that forms the aureole of Idealism has never deterred adherents by difficulties of interpretation. The cause must rather be sought in the odium that was heaped upon Spinoza, a last trace of mediæval

[1] *Types of Ethical Theory*, Bk. I. Chapter 3, § 7.

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prejudice against "the unhallowed deeds of Jews." It was this prejudice that delayed the printing of his books, restricted their circulation, and vilified his teaching. Hence it is little wonder that there were none so poor to do him reverence in developing his teaching; and thus the half-completed conclusion is supported by arguments drawn from a different source. This historical gap, it may be remarked in passing, is an argument against any rigorously *a priori* evolution of the history of philosophy—unless it could be proved that there were internal reasons for Spinoza's system hibernating for over a century! But, upon the other hand, it is important to remember that thought can never die, and that, if Spinoza's system was suppressed in the eighteenth century, he gains his reward in the post-critical philosophy, when any system that depends upon "Thesis, Antithesis and Synthesis," repeats the mutual exclusion of the Attributes and their identity in Substance in a progressive and evolutionary, instead of a substantive order.

Closely connected with the historical position assigned to Spinoza is M. Pillon's placing of Malebranche. "He is generally made," M. Pillon says, "a disciple of Descartes leading to Spinoza; he is therefore placed between the two as a connecting link; whence the reader is liable to take from his philosophy an apparent character of inconsequence and indecision, which gives a false idea of it. The truth is that by the date of his works, he comes after Spinoza, and that he abandons or corrects precisely those Cartesian principles that are fundamental to Spinozism. Malebranche, like Leibnitz, is a reformer of the Cartesian philosophy. Both the Leibnitzian and Malebranchian reforms are independent and very different from each other. We hope to be able to show that they mutually complete and rectify each other. We may say that that of Malebranche is as complete and as profound as that of Leibnitz. Both together contain a refutation of the system of Spinoza" (p. 170 note). There are thus two grounds for placing Malebranche after Spinoza, depending upon the respective dates of the works of each and upon the statement that the philosophical views of Malebranche are more advanced than those of Spinoza. First, as regards the dates, the chief works of Malebranche appeared during the years 1674–88 and those of Spinoza during 1670–7. But when the untimely death of the one is compared with the long life of the other, it is not too much to say that the chronological argument is not conclusive; and that, the difference being so slight, the order of classification will be largely a matter of convenience. In regard to M. Pillon's second argument or series of arguments, he places a fair critic in a difficulty, since it would be manifestly unfair to pass judgment upon the relation of two philosophies when one of them remains still to be expounded. But there are several points upon which M. Pillon has already been explicit, and these must suffice, for the present, in estimating his point of view. First, all positions are relative, and it must not be forgotten that M. Pillon has altered that of Spinoza, moving him nearer to

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Descartes and farther from Leibnitz. Owing to this retrograde movement, Malebranche is, as it were, crowded out in the earlier sequence, and room must be found for him in the later. But if the view already taken be tenable, Spinoza is not altogether "a realistic dogmatist," and there is no need to postpone the hearing of the case of Malebranche. Moreover, as an *argumentum ad hominem*, it may be mentioned that M. Pillon frequently asserts that the whole philosophy of Malebranche is anti-Spinozistic; now if this be so, how is the title of the series of articles justified, for no one has yet defined "evolution" as an oscillation from contrary to contrary? It would be premature to further investigate the "corrections" of the doctrine of Spinoza due to Malebranche, but there is one point upon which emphasis is laid, which is open to present enquiry. M. Pillon clearly shows the difference between the position of the will in the two systems; with Spinoza it is a phase of intellect, with Malebranche it has a distinct place, and hence leads to an ethical system. Upon this, again, it may be remarked that the classification is a matter of taste; but in assigning the value of a criterion to Ethical teaching in the seventeenth century, M. Pillon seems to interpolate later thought into the earlier period. The distinctive character of Modern Philosophy before Kant is the placing of the centre of gravity in the Metaphysics to which Ethics are a dependent supplement; and consequently too much weight should not be given to the Ethics of Malebranche apart from his Metaphysics, indeed it has frequently been pointed out that the two are by no means coherent; and, when the choice must be made between them, the whole tendency of the time gives the casting vote to the Metaphysics.

W. R. Scott.

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VIII.—NEW BOOKS.

The Elements of Ethics. By JAMES H. HYSLOP, Ph.D., Instructor in Ethics, Columbia College. New York: W. Blackwood and Sons, 1895. Pp. vii. 470.

THIS volume is described by the author as an "introductory treatise on the fundamental problems of theoretical ethics," in which "the analysis of various questions has been made as complete as reasonable limits would allow, with the special purpose of trying to throw some light on the perplexities of ethical theories, and to present the author's conclusions regarding them." After an introductory chapter on the definition and scope of the science, and a sketch (seventy pages in length) of the history of Ethics, successive chapters deal with "Elementary Principles," the "Freedom of the Will," "Responsibility and Punishment," "the Nature of Conscience," the "Origin of Conscience," the "Theories and Nature of Morality," "Morality and Religion," and the "Theory of Rights and Duties." The treatment follows pretty closely in the wake of the familiar controversies between libertarians and determinists, intuitionists and empiricists, hedonists and anti-hedonists; and the author is often successful in drawing distinctions and clearing up obscurities which some of the controversialists have overlooked. On the whole it is perhaps to be regretted that he did not restrict himself, even more than he has done, to one or two special questions on which much might be done by clearing up the obscurities due to old controversies which now have either lost their interest or appeal to us from a changed point of view. But the exigencies of a volume which seems intended to serve as a text-book for students, have led to a somewhat more comprehensive scheme, which is not all worked out with the same fulness and accuracy.

Even in the introductory chapter there is some want of perfect clearness. Ethics, as a science, is said to be "a name for the observation, classification, and explanation of certain phenomena" (p. 1), namely, of "the phenomena of human character and conduct," supplemented by reference to man's environment. This suggests the view of ethics as simply a science dealing with a certain body of facts and not clearly distinguishable, now from psychology, now from sociology. But immediately certain characteristics of ethics are given: it is said to be a science of values, to have to do with the Ideal as contrasted with the Actual, and to be Legislative or Normative (pp. 4—6). Ethics by its definition is made a Science of phenomena—observing, classifying, explaining them—; but its "characteristic" is not to have to do with the actual but with the ideal, to be a science of values and normative. One possible explanation of the inconsistency is that two different aspects of ethics—theoretical and practical—are being referred to. Thus Dr Hyslop says (p. 13): "Theoreti-

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cal Ethics employs the explanatory or scientific method ; practical Ethics the normative or regulative method." But the characteristics described on pp. 4—6 are evidently intended as characteristics of the subject treated in the present volume, and that is said to be theoretical, not practical ethics. Another sentence suggests a different view : "the fact that there are certain ends, such as perfection, goodness, happiness, or honesty, temperance, purity and the like, which we can and do feel we ought to aim at, attests the existence of a phenomenon of great importance to moral science" (p. 6). The suggestion seems to be that the ideal or estimate of value or law of conduct, is itself a fact of consciousness, and that this is the order of phenomena with which Ethics has to do. But it is merely a suggestion ; and it would be unfair on so slight a ground to attribute to the author a statement which would vindicate the consistency of his different expressions only by obliterating the distinction between fact and value of fact, actual and ideal—the very distinction which he had just been at pains to point out.

The long chapter on the "Origin and Development of Ethical Problems" hardly fulfils the expectations raised by the title. Instead of simply marking out the way in which different problems arose and the manner in which their aspect changed in the history of thought, the author follows pretty closely—though not quite exactly—the historical order of philosophical authors. His chapter is, therefore, a condensed sketch of the history of Ethics. As such it can scarcely be called satisfactory. There seems a tendency to sacrifice the precise nature of certain historical systems to the exigencies of a method of classification which has always present-day controversies in view. There are besides various inaccuracies, obscurities and omissions. As an instance of omission it may be mentioned that the account of Aristotle's ethics contains no reference to the function of the φρόνιμος in determining the due mean in which virtue consists ; while the account of the English moralists makes no mention of their most characteristic thinker, Bishop Butler, who is, however, afterwards (p. 260) incorrectly referred to as having made "Conscience wholly an emotional capacity." Sometimes, also, the statements are much too vague or loose to be of any value. Thus it is said (p. 81) that : "Locke did not exactly follow the lines of Hobbes' speculations" [concerning the origin and nature of political authority]. No student could gather from such a sentence (nor is the information supplied elsewhere) the clear opposition in which Hobbes and Locke stood to one another regarding the relation between the law of nature and the state of nature. The sentence on p. 69 "Berkeley had disputed the existence of matter, and Hume on the same grounds disputed that of mind, causality, personal identity, &c., leaving nothing but 'impressions,' or experience, as the data of knowledge" is a series of confusions, each clause in which would require a commentary. Another sentence on the same page has completely puzzled me ; I hope I am not doing wrong in blaming the American printers for it ; in other respects they have not done their part well for this volume. The same chapter contains the assertions that Spinoza "represents a purely materialistic conception of the universe" (p. 66)—although he is classed with the idealistic movement, and said to have "set up moral principles of a decidedly subjective character" (p. 64) ; that, according to Hume, "ideas...denote relations of things" (p. 84) ; that the school of "Cudworth, Cumberland, Price, and Clarke," had as its common characteristic "hostility to the conventionalism of Hobbes on the one hand, and to the experientialism of Locke on the other" (p. 81)—although Cudworth was dead and Cumberland's *De Legibus Naturae* published before Locke's *Essay* appeared.

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No dates are given in the book by means of which the reader might correct this slip for himself.

The remainder of the volume seems to me of better quality than the introductory chapters. There is, for instance, a good criticism of Kant's view of the nature of Conscience; and there is much painstaking analysis in the chapter on the "Freedom of the Will": although the latter chapter does not seem to me to carry the analysis far enough into the subjective conditions of voluntary choice. The opinion expressed, in the chapter on the "Theories and Nature of Morality," that "Neither perfection nor happiness, taken alone, is the highest good....The moral ideal is synthetic or complex, made up of elements which alone cannot satisfy the conception of morality," is at least interesting as an index of the trend of opinion of many writers at the present time.

W. R. SORLEY.

Hedonistic Theories from Aristippus to Spencer. By JOHN WATSON, LL.B., Professor of Moral Philosophy in the University of Queen's College, Kingston, Canada. Glasgow: James Maclehose & Sons. London and New York: Macmillan & Co. 1895. Pp. xiii., 248.

Professor Watson has here given us a series of essays on the hedonism of the Sophists, Aristippus, Epicurus, Hobbes, Locke, Hume, Bentham, J. S. Mill, and Spencer. The first part of each essay consists of a clear and concise, if, as in the case of Hobbes, not always adequate, summary of the theory discussed; while the second part is in each case a criticism of the theory from the standpoint of the ethics of 'self-realization.' The author's general objection to hedonism, as stated in the Preface, is that it cannot "plausibly explain morality without assuming ideas inconsistent with its asserted principle." His arguments against the older forms of hedonism are all familiar ones,—and, by the way, whatever one's opinion of Locke as a moralist, many people would not allow that pointing out his determinism constitutes a *reductio ad absurdum* of his doctrine. The best thing in the book is the criticism of Spencer. Professor Watson seems to us to spend too much time over the superfluous task of showing how little is gained for ethics by the 'physical' and 'biological' way of regarding conduct; but he makes some excellent points in discussing the remainder of the *Data of Ethics*. For instance, he objects to Mr Spencer's ideal society in the following terms: "In the ultimate form of society conduct will be perfectly 'heterogeneous.' Does this mean that there will be even a greater division of employments than exists at present? If so, will the conduct of the individuals composing society not be less heterogeneous than it now is, although society as a whole will be more heterogeneous? Is it meant, on the other hand, that each man will discharge more functions than he now discharges, that while the individual will be more heterogeneous in his conduct, society will be less heterogeneous? Again, while it is said that there will be a perfect adaptation of the individual to society, will this adaptation result from a simpler form of society, or from the greater development of the individual? If the latter, how can we put a term to that development and view any form of society as final?" [pp. 215, 216]. Again, on p. 220 he shows with admirable clearness the weak point in Mr Spencer's definition of the moral consciousness as the control of simpler by more complex and representative feeling. Dread of punishment is not a moral motive; dread of inflicting suffering on others is. Where is the criterion by which Mr Spencer makes the distinction?

One's comment on Professor Watson's book as a whole is that it lacks unity. The separate essays are good and helpful; but why not have

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supplied a chapter discussing hedonism in general, summing up the objections scattered through the book, and showing more precisely the relation of one form of the doctrine to others? It is not evident, either, why the theological hedonists should have been left wholly out of account. The author's style is popular, occasionally descending to a cheerful familiarity, as when he conjectures that under certain circumstances the Sophists "would...have found Athens too hot for them." In spite of the defects we have noted, its simplicity and conciseness will make the book a valuable help to students beginning the history of ethics.

MARGARET WASHBURN.

Essays and Notices. By T. WHITTAKER. London: T. Fisher Unwin, 1895. Pp. viii., 370.

The Essays published in this volume are of a very miscellaneous character. They are for the most part reprinted from *Mind*, and many of them are mere book-reviews. The most important is the first, entitled "A Critical Essay in the Philosophy of History." The point discussed is how far the continuity of historical progress from ancient to modern civilisation is broken by the Middle Ages. The general result is "that the return of Europe to light has much more the character of an intrinsic process than the descent into the dark ages. The causes of both transitions are discoverable. In the first, an extrinsic cause gives its character to the movement, whereas in the second the movement is correctly described as a return." (P. 38.) The return was of course not a mere return, but one which was modified by new political, social, and other conditions, which had emerged in the mediæval period. The 42 pages occupied by this Essay are full of interesting matter, and deserve the attention of all who are interested in the philosophy of history. Next in importance is the Essay on "Volkmann's *Psychology*," occupying 48 pages. This is a very clear and correct exposition, and should be of great use to any one who is entering upon the study of the Herbartian development of psychology. The Essay on "Philosophical Antinomies" contains an excellent criticism of Renouvier's point of view. An interesting discussion on the subject between M. Renouvier and the author is published in the Appendix. Other Essays of special interest are that on "Idealism in England in the Eighteenth Century," containing a review of M. Lyon's book on the subject: that on "The Problem of Causality," which deals with the work of Dr E. Koenig: and the two Papers on Giordano Bruno.

The Unity of Fichte's Doctrine of Knowledge. By ANNA BOYNTON THOMPSON. With an Introduction by JOSIAH ROYCE, Ph.D. Radcliffe College Monographs, No. 7. Boston, Mass.: Ginn & Co., 1895. Pp. xx., 215.

This is a sympathetic, indeed, an enthusiastic exposition of the main points of Fichte's philosophic system. From a careful study of Fichte's various works Miss Thompson concludes that the different statements of his doctrines are all in harmony, and that the system is unitary and consistent throughout. The key to his position is that reality is a structure upon a single plan, a logical whole. Given one element, and the whole universe can be deduced from it. The apparent differences between Fichte's conceptions in the earlier and later periods of his life are merely due to a difference of standpoint. In the former, the philosopher was engaged in proving the unity of reality and its final basis in the Absolute; in the

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latter, he was showing that this unity and "God, its head" were but logical inferences, with no existence *extra mentem*. The Fichtean doctrines of sensation, space and time, together with other details of his system, are worked out upon this hypothesis. Much space is devoted to a discussion of the striking applications of the system in ethics. Here are vividly portrayed the practical advantages of a belief in the teaching that we are parts of an infinite strength, which works in us and through us, and on which we may rely for unlimited inspiration and assistance.

Fichte is vigorously defended against the charge of solipsism and self-creation. The first charge fails to recognise that what Fichte states to be the sole existence is not the individual, but the absolute Ego. The second has arisen because the logical progress from the individual to the universal, from the isolated element to the unified system, has been mistaken for a process in reality itself.

A valuable Appendix contains a colligation of the passages in the various works which deal with important and disputed points in Fichte's doctrine. This appendix, which forms the larger portion of the volume, should prove particularly useful to the student of the Fichtean phase of post-Kantian Idealism.

Miss Thompson's Essay will undoubtedly serve to remove many difficulties from the path of the beginner in philosophy. In the mind of the more mature reader, however, a doubt as to the exact relation obtaining between the individual and the absolute Ego must still remain. No method of logical thinking can make it clear how the Absolute can be at once a source of strength and life to the mind that thinks Him, and—nothing outside of the mind at all.

W. B. PILLSBURY.

Studies of Childhood. By JAMES SULLY, M.A., LL.D., Grote Professor of Philosophy of Mind and Logic, University College, London. London & New York: Longmans, Green & Co., 1895. Pp. viii., 527.

"The following Studies are not a complete treatise on child-psychology, but merely deal with certain aspects of children's minds which happen to have come under my notice, and to have had a special interest for me. In preparing them I have tried to combine with the needed measure of exactness a manner of presentation which should attract other readers than students of psychology, more particularly parents and young teachers" (Preface). An examination of the intellectual factors of child-life, with stress upon imagination, includes indications, illustrated by anecdote, of the early forms of the leading concrete ideas of Nature, Self, and God. The emotional side of child-life is taken up in tracing the sources of childish fears; and is further treated in connection with two studies of the moral life of children, 16 pages of which are devoted to the interesting and subtle topic of "Children's Lies." Notice of matters related to the æsthetic consciousness concludes the account of general characteristics; one study being based upon the remarkable set of drawings by children and savages, which Professor Sully has collected from a wide area, and subjected to scientific scrutiny and comparison. Some of the facts concerning the front and side view of the human figure are especially curious. The two concluding studies give individual histories,—one as an example of fairly representative development, the other as an instance of singular and remarkable development, exemplified in the early days of George Sand.

HUBERT M. FOSTON.

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A Short Study of Ethics. By CHARLES F. D'ARCY, B.D. London: Macmillan & Co., 1895. Pp. xxvii., 278.

This little book is intended to serve as an introduction to philosophical ethics; and in certain important respects it is admirably adapted to this purpose. It is clearly and simply written, and interesting both in matter and manner; and it contains a good deal of careful and unpretentious discussion of ethical topics.

On the other hand, neither the main outlines nor the details of the discussion give evidence of much originality. The reviewer, no less than the author, "finds it impossible to express adequately the greatness of the debt" which this book owes to Green's *Prolegomena to Ethics*. Green's argument, on the whole, is closely followed; and, where the author deviates from the track, his speculations cannot always be said to gain in vigour or precision. There is room, no doubt, for an intelligent popular account of Green's *Ethics*; and perhaps Mr D'Arcy might have done better to present his work under this, its more natural guise.

As an ethical text-book, the present volume can scarcely be regarded as an improvement upon three others, of which the author himself speaks with commendation, and which he claims to supplement by expounding their 'metaphysical basis.' Many readers will learn with surprise that Professors Dewey and Mackenzie, and Mr Muirhead "build without a foundation"; and those who are not surprised may be misled. An account, contained in eighteen pages, of such matters, among others, as 'Subject and Object,' 'Relations and Things,' 'Object and Cosmos,' 'Experience and Nature,' and the 'Personality of God,' can hardly be expected to form a very useful or satisfying preface to a 'Study of Ethics.' Mr D'Arcy's metaphysical chapters are too slight to be very convincing; and, considered as an argument, this 'foundation' itself may be thought to stand in no small need of support. This first 'part' is perhaps the least fortunate section of the book.

The last two 'parts' of the volume are better conceived than the first, and contain a good deal of judicious exposition and criticism. The author shows considerable familiarity with recent ethical literature; and his book, on the whole, is one of merit and ability.

CHARLES DOUGLAS.

Introduction to Physiological Psychology. By Dr THEODOR ZIEHEN, Professor in Jena. Translated by C. C. VAN LIEW, Ph.D., and OTTO W. BEYER, Ph.D. London: Swan Sonnenschein and Co.; New York: Macmillan and Co., 1895. Pp. xiv., 305.

This is a translation of the second, revised and enlarged, edition of Professor Ziehen's book. Besides making minor additions and corrections in many places, the author has added a new chapter upon feeling-tone and emotion (pp. 174—197).

It was pointed out in a review of the first edition of the translation (*Mind*, N.S. II., pp. 542, 543) that the English rendering was neither accurate nor idiomatic. The same criticism holds of the second edition. Of the mistranslations and inelegancies marked by the reviewer on the first 36 pp. of the earlier volume, only one is amended in the later. The words 'motory' and 'incitation,' which were charitably interpreted as misprints, remain in the revised text.

"The terminology of this translation," we are told, "holds, so far as possible, to already established precedents." No precedents are cited, however: and the reviewer is unaware of any for such renderings as "minimum of excitation" = *Reizschwelle*, etc., etc.

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On Memory, and *The Specific Energies of the Nervous System*. By Professor EWALD HERING. Chicago: The Open Court Publishing Co., 1895. Pp. 50.

The translation of these two well-known papers shows both the good and bad points of the translations recently issued by the Open Court Publishing Co. The English rendering is accurate: but it is not English. Here is a sentence, taken at random from the body of the book: "The animal kingdom exhibits an inexhaustible multiplicity of form, and to a layman who is not initiated into the science of biology it seems almost incredible that living creatures, so manifoldly different in their forms and habits, should, as germs, in the first stage of their development, be so homomorphous"!

Evolution in Art: as illustrated by the Life-Histories of Designs. By A. C. HADDON, Professor of Zoology, Royal College of Science, Dublin. London: Walter Scott, 1895. (The Contemporary Science Series.) Pp. xviii., 354.

This little volume is full of matter of great interest and value to the psychologist. It first deals with the decorative art of New Guinea, giving the results of the author's own independent research. It then proceeds to "select examples from every age and clime in order to illustrate the life-histories of a number of designs." After this comes a discussion of the "reasons for which objects are decorated." Finally, hints are given as to the most fruitful methods of studying the subject. What is most interesting throughout to the psychologist is the way in which designs are shown to grow through gradual modifications of pre-existing ideas, as they enter into new relations. Fuller notice will follow.

Outlines of Psychology: based upon the results of experimental investigation. By OSWALD KÜLPE, Professor of Philosophy in the University of Würzburg. Translated from the German (1893) by E. B. TITCHENER, Sage Professor of Psychology in the Cornell University. London: Swan Sonnenschein & Co., New York: Macmillan & Co., 1895. Pp. xi., 462.

This is a good translation of a good book. It is by far the best introduction to Experimental Psychology accessible to the English reader. For Critical Notice of the original work see *Mind*, N.S. Vol. III. No. 11, p. 413.

Tempérament et Caractère: selon les individus, les sexes et les races. Par ALFRED FOUILLÉE. Paris: Félix Alcan, 1895. Pp. xx., 378.

This is the third of the remarkable series of attempts which the French have made to construct a science of character. It is written with all M. Fouillée's charm and lucidity of style. It contains much interesting matter in detail: but its central conceptions expose it to severe criticism. The author starts from the distinction between the innate and acquired character. Before we consider the acquired character, we must consider the innate:—as if the two were not so interfused that any attempt to treat them separately would be impossible. Hence the title of the book: *Temperament and Character*.

In classifying the four temperaments, M. Fouillée employs the physiological distinction between anabolic and katabolic changes. He asserts without proof, without considering whether it be even possible, that, in the sanguine and nervous, there is a persistent and general predominance

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of anabolic or synthetic changes over katabolic; and, in the bilious and phlegmatic, of the analytic or katabolic over synthetic. And, in like manner, he attaches to this physiological predominance a psychological predominance of the sensitive processes over the active, or of the active over the sensitive. It does not occur to him that sensation is so intimately connected with muscular action, that to strike a balance between them is impossible. Nor does he even analyse the sense in which this predominance is to be understood. Is a time-excess meant, or an excess in intensity, or in what? In whichever sense we take it, the asserted predominance is unmeaning and unsupported by evidence.

I think that M. Fouillée's classification of character is based on the same fundamental error as his classification of temperament; and, we may add, as his distinction between them. He seems fascinated by the conception that where two processes are inseparable and interfused, it is quite an easy matter to establish a predominance of one of them. He classifies character according to the predominance of one of the three inseparable functions, Feeling, Thought, Will. And here, as his conception is shared by other psychologists, I must consider it more in detail. In fact he only adds thought or intelligence to the classification of M. Ribot; and well shows, as against the latter, that intelligence must be regarded as one of the main formative influences of character. But in what sense is the predominance to be understood? It cannot be in duration: for if the three functions are inseparable, one cannot have a longer life in consciousness than another. Is it in intensity? It is often remarked that when feeling, as pleasure-pain, is at its maximal intensity, thought is at a minimum. Does this mean that thought is relatively simple, that its higher developments are impossible? Obviously it does: but does it mean in addition that the relatively simple thought is reduced to a minimum of intensity? I am doubtful about this. The intensity of the feeling cannot be kept outside the thought which penetrates it. In the extremity of pain or pleasure, we have an intense awareness of the fact. We cannot then infer, when feeling is at its maximal intensity, that it predominates in this respect; only that it involves the relapse of thought to a lower and relatively simple quality. And how are we to adjust these different values, the intensity of feeling and the quality of thought, so as to mean anything by the predominance of one or the other?

And this leads me to the third meaning we may attach to the predominance of a mental function. We may mean its superior quality or development. A man of predominant intellect means a man of a higher quality or development of intelligence. But this also implies what taken apart we may call the fourth meaning of 'predominance.' We may mean superior strength, as estimated by the attainment of its end, and the difficulty of that end. And now we come to the most important distinction. There is an objective, as well as a subjective, predominance. A man of superior intelligence, or of intense feeling, or of strong will, means a man who predominates in one or the other in comparison with the same function in different men, not in comparison with the different functions in himself. And this objective predominance of a function does not involve its subjective predominance. If we ask whether a will which is stronger than the wills of average men is also stronger than its own thought and feeling, the question cannot be answered off-hand, and in part seems unintelligible. How can the will be stronger than thought? Without thought the will is not merely powerless, but non-existent. They are allies, not opponents. I mean speaking generally. There are of course certain kinds of thought which would conflict with the strong will of the man of affairs. He has to confine himself to what is practical. And if

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we use thought in a special sense, we may say that his will is developed at the expense of his intelligence; just as in the highest development of thought we may say the intellect is developed at the expense of the will; —not at the expense of the will in general, for it involves a very persistent will, but at the expense of that masterful will which the practical man develops in the conflicts of life. Now as I understand M. Fouillée, he does not mean this special kind of subjective predominance which we all recognise, but that general subjective predominance of one of the inseparable psychical functions over the others which is in the highest degree doubtful and uncertain. "The type of character," he says, "is the result of the mutual relation of the three great psychical functions" (p. 121): and where they are not in equipoise and form a balanced character, there is a predominance of one or two. Does, then, the strong will of the born ruler predominate over his feelings? Certainly in a special sense it does. This or that variety of feeling, as this or that tendency of thought, needs restraint, and his will predominates in the conflict. But, speaking generally, feeling is as necessary to him as thought. Without the masterpassion to subdue the wills of other men and accomplish his ambitious projects, where would be the strength of his will? There is a kind of will which is cold and inflexible; and here, if anywhere, we shall find it predominant over feeling. Men of this type M. Fouillée describes as having a strong will with much intelligence and little sensibility (p. 178). They are "the cold energetic calculators that are stopped by nothing in the execution of their plans,"—men of the stamp of Von Moltke or Turenne. Now this is no doubt a genuine type of character, formed, as I should express it, by the conjunction of a *strong* will with a high *quality* of intelligence and little *intensity* of feeling. Consider the different values that are here brought together. What is to be our standard of comparison between them? And what predominance is there other than this objective predominance:—that his will is stronger than the average, the quality of his thought superior; while he falls below the average in the intensity of his feelings?

Now I gather that what M. Fouillée expressly means by the predominance of a function is its superior *intensity* in relation to the other functions:—"C'est le rapport d'intensité entre les trois fonctions de la vie psychique qui se traduit par la forme plus ou moins harmonique du caractère" (p. 121). Apply this to his first type in which feeling predominates. There is little force of will or intelligence. It is the impulsive type so frequently met with among children and young people. The feelings predominate in intensity? But they cannot. The intensity of the feelings penetrates the impulsive will that embodies them. The feelings are an element in the volition; and the intensity of the one qualifies the other. Lastly the little intelligence of the type obviously means an intelligence of low development. Could we possibly interpret it to mean a lower degree of intensity? The ideas of children of strong sensibility are not likely to be weak in intensity, but peculiarly vivacious: the intensity of their feelings is communicated to their ideas.

Thus we are quite unable to interpret this type as due to the subjective predominance of one of the mental functions. The predominance, as in the last, is objective. The feelings are above the average in intensity, while the intelligence falls below the average in quality, and the will in firmness and self-control. I might take separately the other interesting types which M. Fouillée has given us with a like result. I can only interpret them so far as I depart from his principle of classification; which neither he, nor anyone else, can apply intelligibly. But this principle is very plausible, and it was necessary to consider it in detail. I suspect

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that an observer of character who is not a psychologist, nor accustomed to define the meaning of his words, would be attracted by it: and as the ordinary man regards thought, feeling, and will, as more or less separate entities within himself, what is more natural than to suppose that one develops independently of the others, and often at their expense?

ALEXANDER F. SHAND.

Étude sur l'espace et le temps. Par GEORGES LECHALAS, ingénieur en chef des ponts et chaussées. Paris: Félix Alcan, 1895.

This book deals with the mathematical and metaphysical, not with the psychological, aspects of space and time. In the first chapter, on geometrical space, the author discusses the nature of geometrical proof. No postulates are required, since, as metageometry shews, all Geometry flows from the mere definition of space, and definitions do not involve the existence of their objects. The justification of a definition lies in the absence of contradiction in its results. Thus general Geometry is apodeictic, but the decision between Euclid and non-Euclid is empirical.

In Mechanics, which is next discussed, we must begin by the choice of a unit-movement, assumed uniform, and chosen from motives of simplicity. We must choose our axes from the same motive; *e.g.* for axes rotating with the sun, Kepler's laws would be false. This does not involve absolute motion, but only care in the selection of axes. (The difficulty, however, lies in the fact, overlooked by our author, that the axes have to be fixed by reference, not to particular bodies, but to empty space.) The fundamental notion of Dynamics is not force, but mass; the determination of actual masses is empirical, but apart from this, Dynamics follows apodeictically from Geometry.

After a chapter on the Geometry of our universe, which adds little to Chapter I., M. Lechalas discusses the problem of similar worlds and the reversibility of the material universe. The former problem is meaningless, since a proportional change of all temporal and spatial magnitudes would be no change. As to the latter, a reversed world would be unstable and improbable. (This answer does not touch the difficulty—apparently insoluble on a purely mechanical level—which lies in the absence of qualitative difference between past and future in mathematical time.)

From a discussion of Kant's antinomies and Zeno's arguments against motion, the author is led to declare that motion is discontinuous. The difficulties of space have hitherto proved insoluble; as to time, however, the Transcendental Analytic provides a solution, by identifying temporal succession with causation. The discrete irreducible elements of motion, again, afford a natural unit for time-measurement, and correspond to distinct events in the causal chain.

The book is chiefly useful as a bibliography of recent French works on the philosophy of Mathematics; its own solutions almost always evade the fundamental difficulties they are intended to resolve.

B. A. W. RUSSELL.

Das menschliche Handeln. Philosophische Ethik. Von D. Dr A. DORNER, O. Ö. Professor an der Universität Königsberg. Berlin: Mitscher und Rostell, 1895. Pp. xii., 737.

The author of this philosophical work has already won for himself a reputation as metaphysician and theologian. He now seeks to perform for man's active function a service parallel to what he had previously done for the cognitive function. A singularly fresh and comprehensive treatment he has given us. I believe that this massive volume on

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philosophical ethics will make his name better known among English-speaking nations than anything he has before done. Broadly and firmly does Professor Dorner bring the whole range of really human action within the sphere and compass of ethical nature and judgment. He would thus avoid the one-sidedness of stress either on the acting subject and his dispositions, or on the product or external result of his action. The conception of action is, with him, the link or *Band* that unites these diverse points of view. Action, with him, does not mean every empirical endeavour possible to man, but only such action as is correspondent with essential man. Regard must be had, he thinks, to the psychological quality whereby the essence of man shews itself—not with any idea of deriving ethics from psychology, but merely of doing justice to psychological occurrences, so far as they come into view in our acting. The psychological basis of ethics must be investigated, yet the ethical life must not be treated as only a particular group of psychological occurrences. Nor does he depend on the empiric development of humanity for the understanding of the ethical, but on those moral ideals which humanity has imaged forth—ideals often enough in antagonism to existing reality. He would in this way attain to the congruent ethical construction of the present. It remains true that the characteristic of the ethical spirit is endpositing activity, which always goes out beyond the merely given character of things that simply happen. Yet Dr Dorner sees how necessary realisation is to ideals, though the realisation can only be partial. He will not renounce all connection of ethics with metaphysic, and resolve ethics completely into psychologic phenomenalism. He thinks Ethics has its religious presuppositions, for ethical life without religion cannot be the most perfect in Kind. Religion does not begin where ethics ends—where, that is to say, there is no more room for man to act. Ethics can cease only where conscious will ceases. It must be possible to be pious and moral—*fromm und sittlich*—at one and the same time. Professor Dorner aims in an especial degree at bringing out the compact unity or unified character of morality; he would demonstrate morality to constitute a totality, and would shew its unconditional validity. He seems to fear that, in treating of the relation of ethics to metaphysic and religion, he may have done more than many modern philosophers will wish, and less than many theologians will ask. I think it certain that some, who—like Professor Dorner himself—are both of these in one, will thank him for his broad and inclusive treatment, and that others, among philosophers at least, will accord him patient and interested hearing. All will admire the exemplary scientific spirit in which he has proceeded, taking it for his chief aim, not to be positive or negative, right or left, but to be true and impartial. Professor Dorner deals in his Introduction with the conception, task, and scope, of philosophical ethics, writing with independent and sustained power of thought, and he is sometimes finely critical and suggestive. Through many modern references he proceeds to shew the insufficiency of the views alike of those who treat ethics as a purely theoretic discipline and of those who resolve it into a thing of purely practical value. Ethical science can never be a purely theoretic discipline so long as it has to do with not only every aspect of what is given, but also, and much more, with the ideal which reaches out beyond our empirical Knowledge. Nor can ethics be viewed as simply something practical. It must mean a widening or enlarging of our knowledge, as becomes a normative or ideal science. But now, taking the ideal as his norm, our author goes on to consider how man may become sure that the ideal is really the highest, and is something scientifically tenable. The unconditional character of morality is firmly maintained by Dr Dorner, although he does not think it quite an easy

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matter. He thinks it perfectly intelligible that a number of our newer writers on ethics should give up or quietly put aside the moral imperative. Only, he thinks the unconditional character of the moral imperative will not be done away without morality itself being thereby destroyed. In the First Part of his work he proceeds to deal with the presuppositions of ethics. He touches first on the Kantian attempt—not able, of course, to sustain itself—to ground ethics so completely in itself that, from the standpoint of the absolute autonomy, presuppositions for ethics become no longer necessary. We have a division dealing with the "phenomenology" of the moral consciousness, next a division devoted to metaphysical presuppositions of ethics, and a third division on the religious presuppositions in ethics.

The Second Part of the work proceeds in a very full manner with ethics as system—the system of human action. The first division here deals with the universal features of ethics, and the second develops detailed or particular treatment of ethical system. This latter task is performed in three sections, treating respectively of the doctrines of duty, of virtue, and of the good. Everywhere Professor Dorner wields an easy control over large masses of fact. The practical issues dealt with are not less important than the speculative, to which I have referred. He has given us a timely and masterly contribution to ethics, marked—whether one always agrees or not—by great philosophic insight and grasp. It is, besides, written with a lucidity of style to which, it must be said, not many among his countrymen may lay claim.

JAMES LINDSAY.

Kant-Studien. Von Dr ERICH ADICKES. Kiel und Leipzig: Verlag von Lipsius und Tischer, 1895. Pp. 185.

These *Studies* deal with all the leading questions relating to Kant's intellectual development. The book begins with a sketch of the history of German epistemology from Kant to Leibnitz, which occupies 51 pages. Considering its necessary brevity, this is admirably done. The relation of the principle of "contradiction" and that of "sufficient reason," in the philosophy of Leibnitz, is set in a clear light, together with the corresponding distinction between truths of reason and truths of fact. Another commendable feature of this part of the work is the emphasis laid on the distinction formulated by Crusius between *principium essendi* and *principium cognoscendi*. In the next section of the work, which deals with Kant's original standpoint, as expressed in the *Nova Dilucidatio* of 1755, the influence of Crusius finds expression in the Kantian distinction between the *ratio antecedenter determinans* and the *ratio consequenter determinans*. But Crusius himself had by no means clearly grasped the nature of the antithesis between ideal and real connexion; and Kant, in 1755, had not advanced so far in this direction as his predecessor. His theory of knowledge is in essentials that of Leibnitz and Wolff. Adickes next discusses what has been called the empirical period in Kant's development. Here he makes an important distinction. We must not confuse Kant's position in 1762–3, with his position in 1765–6. At the earlier date he was still predominantly a rationalist. The empirical tendency, indeed, manifested itself in his refusal to regard the relation of effect and cause as one of predicate and subject in an analytical judgment. But the existence of causal relations still appeared to him to be discoverable through pure reason *a priori*. The simple concepts of real connexion are not derived from sensible experience; they are contained in our own mental preformation, and sense-experience only serves as the occasion of their emergence

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into clear consciousness. Thus Kant is here substantially at the standpoint of Leibnitz. In 1763, on the contrary, all judgments of real connexion are regarded as synthetic, in distinction from analytic, and are referred to experience as their source and ground. The next topic considered is the transformation undergone by Kant's thought in the year 1769. Adickes contends, as against B. Erdmann, that this was due to the influence of Hume. His argument appears to us quite inconclusive. He convicts Erdmann of some errors in detail, but leaves his general position unshaken. In the *Dissertation* of 1770, Kant remains essentially a rationalist in his view of the categories. They are innate laws of the mind, discoverable by analysis of inner experience. The nature and proof of their validity is not expounded from the critical standpoint; and it would seem that they are still held to be applicable to things-in-themselves. Their justification by the analysis of the concept of a possible experience, and their strict limitation within the sphere of possible experience, are not to be found in the *Dissertation;* and it is not clear that Kant at this period keenly or clearly felt the difficulties which led to the subsequent critical development. That special awakening from his dogmatic slumber, which he ascribes to Hume, had not at this date taken place. This does not imply that he had not read Hume, but only that, like everybody else, he did not as yet understand him. However profound Kant's mind was, it was certainly not quick in its movements. The last twenty pages discuss the date at which the *Kritik of Pure Reason* was composed, and maintain, in opposition to E. Arnoldt, that it was completed in the first half of 1780, and not in 1779.

Throughout the work there are many points of interest which we have not space to refer to. These *Studies* cannot be neglected by any serious student of Kant.

Geschichte der neueren Philosophie. Eine Darstellung der Geschichte der Philosophie von dem Ende der Renaissance bis zu unseren Tagen. Von Dr HARALD HÖFFDING, Professor an der Universität in Kopenhagen. Erster Band. Unter Mitwirkung des Verfassers aus dem Dänischen ins Deutsche übersetzt von F. BENDIXEN. Leipzig: O. R. Reisland, 1895. London, Williams & Norgate. Pp. xii., 587.

This First Volume deals with the pre-Kantian development of Philosophy. Professor Höffding's work presents features which give it a distinctive value among the many books which deal with the same subject. It is, in our opinion, the most readable of them. It brings out with especial clearness and adequacy the connexion between the development of Philosophy and the general development of culture. It has also the advantage of not being "made in Germany." The impartial Dane gives what we regard as due prominence to English thinkers. He has evidently studied them at first hand. Full notice will follow.

Die moderne physiologische Psychologie in Deutschland. Eine historisch-kritische Untersuchung mit besonderer Berücksichtigung des Problems der Aufmerksamkeit. Von Dr W. HEINRICH. Zürich: Verlag von E. Speidel, 1895. Pp. iv., 232.

Analyses and criticises the doctrine of Attention in Fechner, Helmholtz, G. E. Müller, Pilzecker, Wundt, N. Lange, Külpe, Münsterberg, Ziehen, and Avenarius. He urges against them all that they have not been true to the law of psycho-physical Parallelism. He thinks that they ought to have stated all their explanations in terms of physiology, whereas, in fact, they have recourse, at many points, to purely psychological exposition.

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According to Dr Heinrich the true method is first to ascertain the physiological fact, and then to assign its psychical counterpart. We hope, for his own sake, that he will not attempt to apply this method too consistently.

Der Geist der neueren Philosophie. Von Robert Schellwien. Erster Theil. Leipzig: Alfred Janssen. London: Williams and Norgate, 1895. Pp. vii. 163.

The spirit of modern philosophy is understood in this treatise in a strictly historical sense. It excludes all empirical interpretations of consciousness which reveals itself in a continuous progress or movement (p. 6). At first sight, it is strange that this point of view is found compatible with the prominence given to Spinoza, and in fact nearly two-thirds of the book is devoted to a careful and original study of his system. Contrary to established commentaries the author finds the dominant note of Spinoza's thought in the conception of freedom (p. 73), and hence a new interpretation of causality in the philosophy of substance. Although this theory is opposed to the general tendency of critics of Spinoza, Kuno Fischer is singled out for attack upon his assertion that "God acts" must be understood in the sense that things follow (in a mathematical sense) from the nature of God. To this it is replied that the contrary is the truth, it is the fact of God's action that is the primary point in the system, the expression "*ex Dei natura sequitur*" does not explain the expression "*Deus agit*"; but upon the contrary the "*agere*" explains and determines the "*sequi*" (p. 93). From this point of view, it might easily be conjectured, new lights are thrown upon the system in detail, without at the same time verging too widely from its practical results and obvious renderings. In fact the hypothesis gains its plausibility from the fact that action is confined to the Divine sphere and hence the modes remain undisturbed. The present part concludes with an interesting contrast between the causal theories of Spinoza and Darwinian Evolution.

W. R. Scott.

Die Grundprobleme der Logik. Von Jul. Bergmann. Zweite völlig neue Bearbeitung. Berlin: Mittler und Sohn, 1895. London: Williams and Norgate. Pp. 232.

The work, of which this is a second and much altered edition, appeared in 1882,—being a general review of the logical position taken up by the author in a previous work, *Reine Logik*. The present book consists of an Introduction, containing Sections on the sphere and departments of Logic, Formal and Metaphysical Logic, and the procedure of Logic; and two Parts, of which the first treats of Thought and Knowledge, the second of Progressive Knowledge. Critical Notice will follow.

Elementi di Psicologia e Logica ad uso dei licei. Per Francesco Prof. Bonatelli. II. Edizione. Padova: F. Sacchetto, 1895. Pp. 347.

This little manual has reached its second edition in the fourth year of its existence. No changes have been introduced, the author having contented himself with merely 'touching up' the diction in the way of clearness and exactness. His presentation of the subject in two consecutive parts is certainly very lucidly and directly effected so far as it goes. That it can be very adequate is hardly to be expected within such narrow limits—especially in those left over for Logic, viz. only 97 pages. Accordingly we

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meet, not seldom, with very sketchy treatment, *e.g.* in the opposition of propositions and in induction, which with a curiously antiquated effect we find treated as syllogism. It would have been a wiser plan to have reserved for a worthier exposition of induction the pages given up to a section on 'metaphysical psychology' with its discussion of the difference between the *io* and the *anima*, and the like. However, it is interesting to follow the exposition of both subjects in its divergences from English methods. But an absence now and again of continuity or evolution of presentation causes it to produce a somewhat disjointed and superficial impression.

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Frank Granger, *The Worship of the Romans*, London, Methuen & Co., 1895, pp. ix., 308.

J. M. Robertson, *Buckle and his Critics: a study in Sociology*, London, Swan Sonnenschein & Co., 1895, pp. vii., 565. (Critical Notice will follow.)

T. W. Taylor, *The Individual and the State: an Essay on Justice*, Boston U. S. A., and London, Ginn & Co., 1895, pp. 90.

A. Davis, *Elementary Physiology*, (Blackie's Science Text-Books), London, Blackie and Son, 1895, pp. 223.

W. Tallack, *Penological and Preventive Principles*, Second and Enlarged Edition, London, Wertheimer, Lea & Co., 1896, pp. xii., 480.

A. E. Giles, *Moral Pathology*, London, Swan Sonnenschein & Co., 1895, pp. viii., 179.

E. Ferri, *Criminal Sociology*, London, T. Fisher Unwin, 1895, pp. 284.

A. Lichtenberger, *Le Socialisme au xviii^e siècle*, London, Félix Alcan, 1895, pp. 471.

L. Dugas, *Le Psittacisme et la Pensée Symbolique*, Paris, Félix Alcan, 1895, pp. 202.

J. Lourbet, *La Femme devant la science contemporaine*, Paris, Félix Alcan, 1896, pp. viii., 178.

J.-J. Rousseau, *Du Contrat Social* (Édition comprenant avec le texte définitif les Versions primitives de l'Ouvrage collationnées sur les Manuscrits autographes de Genève et de Neuchâtel), une introduction et des notes par E. Dreyfus-Brisac, Paris, Félix Alcan, 1896, pp. xxxvi., 424.

L. Mabilleau, *Histoire de la Philosophie Atomistique*, Paris, Félix Alcan, 1895, pp. vii., 560.

M. Jaëll, *La Musique et la Psychophysiologie*, Paris, Félix Alcan, 1896, pp. vi., 170.

F. H. Ritter von Arneth, *Das classische Heidenthum und die christliche Religion*, Zwei Bänder, London, Williams and Norgate, 1895, pp. 396 and 332.

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IX.—PHILOSOPHICAL PERIODICALS.

THE PHILOSOPHICAL REVIEW. Vol. IV., No. 5. **J. Royce.** 'Self-consciousness, Social Consciousness and Nature, (I).' [Continues the discussion, begun in Sept., 1894, of the "External World and the Social Consciousness." Defends and illustrates two theses: (1) "a man is conscious of himself, as this finite being, only in so far as he contrasts himself, in a more or less definitely social way, with what he takes to be the...conscious life of some other finite being"; and "except by virtue of some such contrast" he "cannot become self-conscious"; (2) "the original...of the conception of a non-ego is given to me in my social experiences"; "our conception of physical reality as such is secondary to our conception of our social fellow-beings, and is actually derived therefrom."] **J. Watson.** 'The Absolute and the Time Process, (II).' [If the Absolute is beyond the time-process, there is no possibility of knowledge. Yet an Absolute in process is said to be a self-contradiction. One way of escape is to regard time as a 'mere appearance' (Kant, Bradley). A better way is to look on it as an universal aspect of the states of the real: time is then the thought of pure succession, the conception of every possible succession. The Absolute is not *in* time; it is "the principle of unity presupposed in all succession." On the other hand, were there no succession of events, there would be no Absolute. How shall we conceive of this Absolute? The definitions of it as a substance, a first cause, and an abstract person are inadequate. The Absolute is a "spirit, *i.e.*, a being whose essential nature consists in opposing to itself beings in unity with whom it realises itself"; a "self-alienating or self-distinguishing subject."] **H. Nichols.** 'The Feelings.' ["The feelings are the normal motor-ideas of our instinctive conduct. The brain mechanism of the instincts is non-plastic...The distinguishing characteristic of the feelings, presentatively, is their simplicity. This simplicity is due to the non-serial character of the stimulations which reach the instinct-mechanism, and to this mechanism's lack of that plastic susceptibility which, lending itself to serial modification, is, together with the latter, requisite for presentative organisation and development."] Discussions: **J. H. Hyslop.** 'Desiderata in Psychology.' [Plea for better classification.] **A. T. Ormond.** '"Basal Concepts": a Rejoinder.' [Reply to Alexander's criticism, May, 1895.] Reviews of Books. Summaries of Articles. Notices of New Books.

Vol. IV., No. 6. **J. Royce.** 'Self-consciousness, Social Consciousness and Nature, (II).' [Takes up the following positions: (3) "any metaphysical proof that...physical nature exists at all, must also be a proof that behind the phenomena of nature...there is other conscious life finite like our own, but unlike" in so far as it "does not enter into closer social relations with us human beings"; (4) there is a probable proof for "a real finite world called the Realm of Nature"; and as external nature exists by

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virtue of a more or less definite appeal to the categories of our social consciousness, this proof points to a finite life behind natural phenomena, "in more or less remote, but socially disposed relations to us": (5) the proof is furnished by the facts of Evolution, and Evolution "promises to become a sort of universal Sociology"; (6) the author's view must not be confused with animism, hylozoism or the doctrine of mind-stuff, with the ideas of Schopenhauer, Schelling or von Hartmann. It differs from them in genesis: it makes of Evolution "the history of the differentiation of one colony of the universal society from the parent social order of the finite world in its wholeness."] **N. Wilde.** 'The Question of Authority in Early English Ethics.' [This, the burning question for the sixteenth and seventeenth centuries, was answered with any degree of clearness by Hobbes alone.] **E. M. Bowden.** 'Ethics, Theoretical and Applied.' [Different modes of inquiry are appropriate to the two branches of ethics; the examination in the abstract of the underlying principles which determine the moral quality of the feelings prompting conduct; and the assigning of a particular case, in the concrete, to the category under which it falls.] **W. W. Carlile.** 'Natura naturans.' [The conception of the world as a mechanical system really involves belief in the existence of a mechanician outside it. Illustrations from language, institutions, physiology; criticism of Mill. The predicates of the universal mind; criticism of Hegel.] Discussions: **D. S. Miller.** 'Professor Watson on Professor Fullerton's Translation of Spinoza.' [Defence of Fullerton.] **J. H. Hyslop.** 'An Explanation.' [Of misprints in his *Ethics*.] Reviews of Books. Summaries of Articles. Notices of New Books. Notes.

THE PSYCHOLOGICAL REVIEW. Vol. II., No. 5. **J. Royce.** 'Some observations on the Anomalies of Self-Consciousness, (I).' [Our inner notion of the self of self-consciousness is (1) a mass of somewhat vaguely localised sensory contents, and (2) feelings of self-possession or spontaneity, in virtue of which the self appears to control the train of association, impulses, and acts of attention and of choice. This primary self-consciousness grows so as to include (3) the self of past and future, and (4) social and professional self-estimation. All four stages of the self are liable to forms of diseased variation. On the formation of the complex self, its liability to variation, and the reason of variation in definite directions, we may throw light by asking: How do we get the habit of drawing a boundary, in consciousness, between ego states and non-ego states? How is it that the ego shifts with alteration of the non-ego? And how does the ego become so intimately related to the sensations of the common sensibility? The answers offered are in substantial agreement with those given by Baldwin (*Mental Development*), and follow from the writer's philosophical discussions of self-consciousness in the *Phil. Rev.*] **H. Ellis.** 'On Dreaming of the Dead.' [In a certain type of dream the dreamer sees a dead person as alive, and has to account for the image; the most obvious theories are either that the dead person has not really died, or that he has returned from the dead. The type may have an anthropological significance.] **S. F. McLennan.** 'Emotion, Desire and Interest: Descriptive.' [Parallel analyses of emotion and desire.] **E. M. Bache.** 'Reaction-time with Reference to Race.' [Simple impressions, auditory, visual, or tactual, "invite secondary reflex action." Hence low races should react more quickly than high. Experiments on eleven Indians, eleven Africans, and twelve Caucasians, give some support to the hypothesis.] Discussions: **H. Nichols.** 'Pain Nerves.' [Against Strong's view that pain impulses are exaggerations of tactual and temperature impulses, and are conducted inward by the same fibres.] **J. M. Baldwin.** 'Professor Watson on Reality

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and Time.' [Reality in its completeness cannot be merely a thinkable reality: if thinkable, it must have the quality of moving the possible thinker by way of belief, ethical appreciation, etc. But it may be so simple as to be unthinkable, resting "in its own limpid immediacy."] Psychological Literature. Notes.

Vol. II., No. 6. **D. S. Miller.** 'The Confusion of Content and Function in Mental Analysis.' [A confusion, frequent in psychological controversy, "consists in supposing that mental causes...must themselves be an index, by the internal evidence they offer, of the train of consequences that they entail,"—that content is a sufficient key to function. Instances are given to prove the mischief which follows upon this confusion.] **J. M. Baldwin.** 'The Origin of a "Thing" and its Nature.' [Statements of nature are mostly statements of origin. These do not exhaust the reality of a thing, however, since the reality not only has had but is about to have a career. To rule out teleology (prospective organisation) would be fatal to science. A thing's natural history does not show that it has no worth beyond the details of that history. Every mental content begets and confirms the retrospective attitude, but also begets the expectant or prospective attitude.] **J. Royce.** 'Some Observations on the Anomalies of Self-consciousness, (II).' [Details of a case of deranged self-consciousness. Summary of this and the preceding paper: (1) self-conscious functions are primarily social functions; (2) in primary contrasts of ego and non-ego, the ego includes modifications of the common sensibility and the feelings of control, while the non-ego is colder, better localised and less controllable; (3) emotions and masses of common sensation become associated to social situations; (4) different forms of the association give rise to memorial and to reflective self-consciousness (we may be self-conscious "even when quite alone with our own states"); (5) the anomalies of self-consciousness are either primary alterations of common sensation, suggesting anomalous social situations, or primary anomalies in social habits themselves.] **G. Tawney.** 'The Perception of Two Points not the Space-Threshold.' [Preliminary work along the lines recently laid down by Külpe, but without reference to Külpe's discussion.] Discussion and Reports: **H. R. Marshall.** 'Physical Pain.' [Defence of the author's *quale*-theory against Strong.] **J. H. Claiborne.** 'A Case of Subjective Pain.' [Pain was suffered, during and after an operation, "for which there was no apparent cause." As agreeable and disagreeable images were voluntarily aroused, relief and pain succeeded one another.] Psychological Literature. Notes.

THE AMERICAN JOURNAL OF PSYCHOLOGY. Vol. VII., No 1. Editorial. **T. R. Robinson.** 'Experiments on Fechner's Paradoxon.' **A. Kirschmann.** 'Remarks on the Foregoing Article.' [The phenomenon is dependent on the absolute intensity of the light employed. Points of doubt are whether it occurs in the case of real binocular combination with tridimensional properties, and in that of partly coincident double-images.] **J. O. Quantz.** 'The Influence of the Colour of Surfaces on our Estimation of their Magnitude.' [Moderately sized surfaces on darker background are overestimated at the less refrangible, and underestimated at the more refrangible end of the spectrum. Similar and similarly seen surfaces, white or coloured, are underestimated when moving to or from the eye.] Minor Studies from the Laboratory of Cornell University: **W. B. Pillsbury.** 'Some Questions of the Cutaneous Sensibility.' [Determination of the space limen by Weber's localisation method, corrected to meet Czermak's objection, etc.] **D. R. Major.** 'On the Affective Tone of Simple Sense Impressions.' [An attempt to employ the serial method in the domains of sight, sound and touch. Many of the results are in opposition to those of

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Cohn (*Phil. Stud.*, x., 4).] **E. B. Titchener.** 'A Psychophysical Vocabulary.' [German-English.] Minor Studies from the Laboratory of Wellesley College: **M. W. Learoyd.** 'The "Continued Story".' [Nearly 75 % of children have continued stories; girls slightly more often than boys. Character and origin of the stories.] **M. W. Calkins.** 'Synaesthesia.' ['Forms,' varieties of pseudochromaesthesia, associations of colour with sound and shape, etc. Explanations. Specimen questionnaire.] Psychological Literature. [**G. S. Hall** on Psychical Research.] Notes.

REVUE PHILOSOPHIQUE. 20me Année, No. 9. (Septembre, 1895.) **Dugas.** 'Auguste Comte: Étude critique et psychologique (I.).' [Discusses first the inner coherence of Comte's philosophy. He falls into inconsistencies in his view of the relation between "heart" and intellect. On the one hand, he makes scientific knowledge the basis of progress; on the other, he regards scientific knowledge as useless without the "enthusiasm of humanity"; whereas this enthusiasm, even apart from scientific training, is capable of supreme insight and has supreme value. A general sketch is then given of the life of Comte. His utterly unpractical character is well brought out. Intensely pre-occupied by ideal aims and principles, he was thereby rendered blind to the facts of ordinary life. Fallacies of memory were of constant occurrence with him. He always represented past events in his life, not as they *were*, but as they *ought to have been* from his point of view at the time being. The general impression left on the reader by this account is that no one was ever further removed from being a Positivist than Comte.] **G. Milhaud.** 'La métaphysique aux Champs-Élysées.' [A dialogue between the spirits of Protagoras, Plato, Anselm, Descartes, and Kant. The subject is the ontological proof of the existence of God. The discussion is interesting, but not very edifying.] **Cresson.** 'Une morale matérielle est-elle impossible?' [All conation, in reaching its end, ceases. Whatever therefore brings about permanently and finally the cessation of Will, is the ultimate end of human existence. But a perfect being, having all he is in need of, has no Will: therefore perfection is the moral ideal.] **Adam.** 'Note sur le texte des "Regulae ad directionem ingenii" de Descartes.' Analyses et comptes rendus.

No. 10. (Octobre, 1895.) **L. Arréat.** 'Le "Parlement des religions."' **Ch. Féré.** 'La physiologie dans les métaphores.' [Even in animals we find gestures expressive of emotion which may be regarded as a kind of metaphor. In ordinary language words and phrases are current which refer to the physiological concomitants of emotional states.] **Dugas.** 'Auguste Comte: Étude critique et psychologique (Fin).' [Deals with the intellectual and the emotional life of Comte. Aided by a retentive memory and great power of logical arrangement, he amassed in his early youth all the knowledge which he considered necessary as a basis for philosophising. After this, he read no more: but devoted the rest of his life to unifying the results of the special sciences, so as to make them fruitful in view of human needs. In time, the exclusive devotion to theorising led to vagueness and mysticism. The presentation of the sentimental aspect of Comte's life consists mainly in an account of his relations with Madame De Vaux.] **Laupts et Henri.** 'Esthétique et Astigmatisme.' Notes et discussions. Revue générale, &c.

REVUE DE MÉTAPHYSIQUE ET DE MORALE. 3me Année. No. 5. **G. Noël.** 'La Logique de Hegel: La logique dans le Systéme (*suite*).' [A thoroughly Hegelian essay, in which the writer tries to vindicate Hegel against the charges, often urged against him, of reasoning in vicious circles. The paper well deserves study: but its closely woven argument does not admit of being

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intelligibly presented in a short abstract. We quote the following to show the essayist's standpoint. "The last word of the system is not the Idea in its primitive abstraction: the last word is Mind—the Idea which thinks itself in thinking all things. It is in certain ways the *νόησις νοήσεως* of Aristotle. But there is this great difference between Hegel's Conception and that of Aristotle, that this inner life of pure thought does not [for Hegel] exclude, but rather contains and presupposes, the material world. It is *in* thinking Nature, and *because* it thinks Nature, that the supreme Thought thinks itself." (Surely Aristotle is here to be *compared*, not *contrasted*, with Hegel).] **M. Hauriou.** 'L'alternance des Moyen-Ages et des Renaissances, et ses Conséquences Sociales.' [A study of two laws of periodic change in the historical development of thought, which were overlooked by Comte, and are, to some extent, in conflict with his famous generalisation of The Three Stages.] **L. Dimier.** 'Le Modelé dans la peinture, et la troisième dimension (à propos des manuscrits de Léonard de Vinci).' Études Critiques. Discussions.

No. 6. **H. Poincaré.** 'L'Espace et la Géométrie.' [A paper developing a former sentence of the author's to the effect that other beings, with minds and senses like ours, but without previous education, might receive from a certain kind of external world impressions whereby they would be led to construct a non-Euclidean geometry, and to localise the phenomena of their external world in a non-Euclidean space, or even in a space of four dimensions. We, if transferred suddenly to this new world, could, without difficulty, accommodate its phenomena to our Euclidean notion of space. A very ingenious paper whose main conclusion is, that, though experience plays an indispensable *rôle* in the genesis of geometry, yet it would be an error to infer that geometry is, even in part, an empirical science.] **L. Dugas.** 'Psychologie du Nominalisme.' [This article is announced as an extract from a book destined to appear in the Alcan Library, entitled *Le Psittacisme et la Pensée Symbolique.* "Abstraction is *logical* on these conditions, but it remains to be seen whether these conditions can be fulfilled; in other words, whether abstraction is *psychologically real.*" For purely scientific concepts the words we use are wholly without images. "A science is a well-constructed language"—but this language has a meaning.] **A. Spir.** 'Nouvelles Esquisses de Philosophie Critique (*suite*),—Du Principe agissant de la Nature.' ["Force—the power of producing effects—is no property of any individual object." "Nature has a side withdrawn from our perception, on which all the manifold diverse phenomena of perception are connected, in other words, form an unity. This side—that of Nature's Unity—is the active principle, the *natura naturans*, often erroneously confounded with God, really nothing but Nature itself, so far as it has one side withdrawn from perception." An article which shows how metaphysics will insist on coming in, though one strive to keep it out 'with a pitchfork.'] Discussions. Études Critiques.

PHILOSOPHISCHE STUDIEN. Bd. XI., Heft 4. **F. C. C. Hansen und A. Lehmann.** 'Ueber unwillkürliches Flüstern.' [Experiments on thought-transference. Proof that no new mode of energy, "radiation," is developed in purporting transference of visual images from person to person. Successful thought-transference depends upon involuntary whispering. Proof of this directly, in experiments with and without suppression of vocal innervation; and indirectly, by a phonetic analysis of the whisper, and a comparison of the confusions of word with word, occurring in the writer's investigation and in results published by the *S.P.R.*, with the confusions to be expected upon phonetic principles. The carrying power and modes of production of the unconscious whisper.] **T. Heller.** 'Studien zur

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Blinden-Psychologie, Schluss.' [The association of ideas of touch and hearing. The 'sense of distance' of the blind. Surrogate ideas (Hitschmann).] **P. Mentz.** 'Die Wirkung akustischer Sinnesreize auf Puls und Athmung (Schluss).' [Voluntary attention. Experiments involving listening to continuous compositions. Conclusion: the pulse changes observed are not the result of respiratory changes; the two series are parallel. It is clear that the effects of sensations, feelings, emotions and voluntary attention are far more widely diffused in the organism than has ordinarily been supposed. Need of further research in this sphere.] **A. Thiéry.** 'Ueber geometrisch-optische Täuschungen (Fortsetzung).' [Illusions of magnitude. 1. Illusions with equal figures cut by parallel transversals. 2. Illusions with linear distances cut by convergent transversals.]

ZEITSCHRIFT FÜR PHILOSOPHIE UND PHILOSOPHISCHE KRITIK. Bd. CVII., Heft 1. **H. Siebeck.** 'Platon als Kritiker aristotelischer Ansichten.' [A highly interesting and important paper written from a new standpoint. Siebeck proceeds upon the assumption that Aristotle before the close of his twenty years' acquaintance with Plato published some criticisms of his master to which the latter may be supposed to have replied. From this standpoint the *Parmenides* is once more examined. Siebeck finds that its purpose is to answer objections to Plato's Theory of Ideas which Aristotle had started in early life, and published in an early work—*περὶ φιλοσοφίας*. These objections were afterwards transferred to the first book of the *Metaphysics*, where they are now read by us. We are glad to see that Dr Siebeck makes use of Mr Jackson's valuable papers on this subject in the *Journal of Physiology*: he does not, however, seem to have read Mr Waddell's recently published edition of the *Parmenides*.] **P. van Lind.** 'Immanuel Kant, und Alexander von Humbolt.' [Concludes a series of papers, chiefly physical and astronomical, in which the position of Kant is examined and vindicated. The writer believes the sage of Königsberg to have been the greatest of all speculative or moral philosophers]. **Dr Joh. Hebinger.** 'Die philosophischen Schriften des Nikolaus Cusanus (III).' [Contains a long bibliographical and general account of the works of this fifteenth-century writer—"a great Platonist, whose philosophic vision reaches back into the depths of venerable antiquity, and forward into a boundless futurity."] **Friedrich Jodl.** 'Jahresbericht über Erscheinungen der Anglo-Amerikan. Litteratur aus dem Jahre 1893.' [Among authors whose works are reviewed are Leslie Stephen—of whom very complimentary words are used—Calderwood, H. Spencer, Lodge, Williams, MacDonald.] Recensionen &c.

VIERTELJAHRSSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE. XIX. Jahrgang, Heft 3. **G. Helm.** 'Ueber die Hertz'sche Mechanik.' [Hertz eliminates the conception of force from the Newtonian mechanics, by substituting for it in every case the geometrical conditions under which movement takes place.] **A. Marty.** 'Ueber subjectlose Sätze und das Verhältniss der Grammatik zu Logik und Psychologie (VII. *Schluss*).' [Having in a previous article expounded his view of the double judgment, as consisting in (1) affirmation of the existence of a subject, and (2) ascription to it of a predicate, Marty now proceeds to consider its grammatical formulation. It finds appropriate expression in the categorical proposition. Marty combats the view that the categorical proposition is primarily or specially a statement of the relation between *thing* and *property*, or *substance* and *accident*. He next discusses what he calls "categoroid" judgments. These have categorical forms, but do not affirm the existence of their subject. His examples include such propositions as "All equilateral triangles are equiangular." This is, according to him, really a

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negative judgment. It means there are no equilateral triangles which are not equiangular. We cannot *affirm* an attribute of a subject without affirming the existence of the subject. The remainder of the article is occupied with an attempt to distinguish true impersonals from propositions which are impersonal only in grammatical form. The views of Erdmann and Puls on this point are criticised.] Anzeigen &c.

PHILOSOPHISCHES JAHRBUCH. Bd. VIII., Heft 3. **Von Hertling.** 'Ueber Ziel und Methode der Rechtsphilosophie (continued).' [The writer continues his criticism of Merkel's *Elemente der allgemeinen Rechtslehre*, especially in regard to his denial of the dependence of law on morality.] **L. Schütz.** 'Der hl. Thomas v. Aquin u. sein Verständniss des Griechischen.' [St Thomas had seen some books of Aristotle in Greek; this does not mean that he had read them. On the other hand, if his false Greek etymologies proved anything, we might conclude *a simili* that he did not know Latin. But we find in his works (1) wrong translations of familiar Greek words (*e.g. hebdomas=editio*!); (2) words which are not even Greek (*e.g. epicacocharchia* for *ἐπιχαιρεκακία*); and the number of such words proves that he was ignorant of the language.] **E. Rolfes.** 'Die vorgebliche Präexistenz des Geistes bei Aristoteles (concluded).' [A passage at the end of *Metaphys.*, ch. III., is a decisive denial of the pre-existence of the soul.] **J. Uebinger.** 'Die mathematischen Schriften des Nik. Cusanus.' [This paper, at first biographical, follows Nicholas of Cusa step by step in his studies at Padua and in his own country; it then goes into a detailed examination of his ideas. The most curious part is his application of mathematics to theology. Some have represented God as an infinite straight line, some as a triangle, some as a circle, some as a sphere; he says they are all of them right; for, if a line were infinite, it would be a circle, a triangle, and a sphere at the same time. And he proves it. (To be continued).]

Heft 4. **Von Hertling.** 'Ueber Ziel und Methode der Rechtsphilosophie (concluded).' [Human social life is based on the ethical idea of duty, of which law merely carries out the dictates. Mere experience cannot give binding force to law, for it cannot account for the binding power of morality itself.] **B. Adlhoch.** 'Der Gottesbeweis des hl. Anselm (continued).' [St Anselm's demonstration of God's existence is conclusive as a psychological, not as an ontological, proof. It is not an *a priori*, but an *a posteriori*, or, at most, an *a simultaneo* process. We *have* the idea of the Infinite; if it did not really exist, we could not have that idea. With other ideas this is not the case; the existence which they imply may be merely notional, not real. A discussion follows, in scholastic form, refuting various arguments to the contrary.] **Schanz.** 'Der Parsismus (concluded).' [In this second paper, there is a short account of the Parsee cosmology, of its narrative of the Creation, the Fall and the Deluge, and of the vague idea of the Trinity, the Incarnation, and the Atonement which it contains; also of its priesthood, temples, sacrifices, purifications, and various ceremonies by which the whole life of a Parsee was and is governed.] **Uebinger.** 'Die mathematischen Schriften des Nik. Cusanus (continued).' [The writer here goes on to notice, not without a plentiful sprinkling of biographical facts and dates, Nicholas of Cusa's investigations concerning the quadrature of the circle; his criticism of Archimedes's solution, and his attempt to solve the question by a method of his own. His demonstration is given at length, together with a diagram. It did not satisfy him, and the wider problem, 'how to find a straight line equal to a given curve,' which he at first thought insoluble, gave rise to his great work, *De Geometricis Transmutationibus*.]

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ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. Band I., Heft 4. **G. Frege.** 'Kritische Beleuchtung einiger Punkte in E. Schröders Vorlesungen über die Algebra der Logik.' **A. Spir.** 'Wie gelangen wir zur Freiheit und Harmonie des Denkens?' JAHRESBERICHT über die Erscheinungen auf dem Gebiete der systematischen Philosophie: (I.) **F. Jodl.** 'Jahresbericht über die Erscheinungen der Ethik aus dem Jahre 1895.' (II.) **R. Ardigo.** 'Rassegna dei lavori di Filosofia sistematica pubblicati in Italia dal gennajo 1893 al luglio 1894.' Bibliographie der philosophischen Litteratur des Jahres 1894. Zeitschriften &c.

PFLÜGER'S ARCHIV. F. D. GESAMMTE PHYSIOLOGIE. Bd. 57, Heft 10–11. **F. Matte.** 'Experimenteller Beitrag zur Physiologie des Ohrlabyrinthes.' **J. Bernstein.** 'Ueber die specifische Energie des Hörnerven, die Wahrnehmung binauraler (diotischer) Schwebungen, und die Beziehung der Hörfunktion zur statischen Funktion des Ohrlabyrinths.' **W. A. Nagel.** 'Experimentelle sinnesphysiologische Untersuchungen an Coelenteraten.'

Bd. 58, Heft 5–6. **L. Hermann and F. Matthias.** 'Phonophotographische Untersuchungen.' V. 'Die Curven der Consonanten.' With **A. Ehrhardt.** VI. 'Nachtrag zur Untersuchung der Vocalcurven.'

Bd. 59, Heft 1–2. **A. Bruck.** 'Ueber die Beziehungen der Taubstummheit zum sogenannten statischen Sinn.' Heft 5–6. **J. R. Ewald.** 'Zur Physiologie des Labyrinths. III. Das Hören der labyrinthlosen Tauben.' Heft 7–8. **E. Hering.** 'Ueber angebliche Blaublindheit der Fovea centralis.' **W. A. Nagel.** 'Der Sensibilität der Conjunctiva und Cornea des menschlichen Auges.' **W. A. Nagel.** 'Zur Prüfung des Drucksinnes.'

Bd. 60, Heft 1–2. **H. Pretori and M. Sachs.** 'Messende Untersuchungen des farbigen Simultancontrastes.' Heft 3–4. **L. W. Stern.** 'Taubstummensprache und Bogengangsfunctionen.' **J. R. Ewald and I. H. Hyde.** 'Zur Physiologie des Labyrinths.' IV. 'Die Beziehung des Grosshirns zum Tonuslabyrinth.' **J. Loeb.** 'Ueber den Nachweis von Contrasterscheinungen im Gebiete der Raumempfindungen des Auges.' **E. Hering.** 'Ueber das sogenannte Purkinje'sche Phänomen.' Heft 5–6. **A. Konig.** 'Ein kurzes Wort zur Entgegnung und Berichtigung.' [Against Hering, Bd. 59, Heft 7–8.] **A. Schapringer.** 'Findet die Perception der verschiedenen Farben nicht in ein und derselben Lage der Netzhaut statt?' Heft 9–10. **J. Loeb.** 'Zur Physiologie und Psychologie der Actinien.' Heft 11–12. **F. Melde.** 'Ueber "resultirende" Töne sowie einige hierbei gemachte Erfahrungen.'

Bd. 61, Heft 1–3. **E. Sauberschwarz.** 'Interferenz-Versuche mit Vocalklängen.' **E. Hering.** 'Ueber angebliche Blaublindheit der Zapfen-Sehzellen.' **J. Bernstein.** 'Ueber das angebliche Hören labyrinthloser Tauben.' Heft 4–5. **L. Hermann and H. Hirschfeld.** 'Weitere Untersuchungen über das Wesen der Vocale.' **H. Strehl u. a.** 'Beiträge zur Physiologie des inneren Ohres.' Heft 6. **W. Wundt.** 'Zur Frage der Hörfähigkeit labyrinthloser Tauben.'

RIVISTA ITALIANA DI FILOSOFIA. March—April. **S. Ferrari.** 'Rodolfo Seydel e la sua opera postuma sulla Filosofia della Religione.' [Seydel was chiefly interested in the Philosophy of Religion. His inspiration came from C. Weisse. His own treatment of the subject followed closely Kantian lines.] **F. Cicchitti Suriani.** 'La dottrina dell' Induzione secondo un' opera recente del Prof. Benzoni.' **M. Novaro.** 'Il concetto di infinito e il problema cosmologico.' [Criticises the teaching of Kant, Leibnitz, Locke, and others on this subject.] Bibliografia &c.

May—June. **C. Cantoni.** 'Luigi Ferri.' [An obituary notice and eulogy.] **L. Credaro.** 'Le basi della teorica Herbartiana dell' istruzione.' [A review of Herbart's work on Theory of Education. It is claimed for him that he was the first who clearly emphasised the importance of educational training

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as distinguished from mere communication of knowledge.] **S. Ferrari.** 'Rodolfo Seydel e la sua opera postuma sulla Filosofia della Religione. (II).' **M. Novaro.** 'Il concetto di infinito e il problema cosmologico.' Bibliografia &c.

VOPROSY FILOSOFII I PSYCHOLOGII. May, 1895. **W. A. Wagner.** 'On Music, its origin and development.' [Music as an art could not have been developed before articulate language. Now, its development proceeds neither from sexual nor natural selection; this is proved in many ways, but chiefly by the low condition of music among modern savage tribes. Its evolution has been simultaneous with civilisation.] **A. A. Kozloff.** 'Tolstoi's "Master and Man".' **W. S. Solovieff.** 'On Virtue.' [The three fundamental elements of morality (shame, mercy, and religious feeling), may be considered as virtues, and, consequently, as rules of conduct, and productive of happiness. All the other so-called virtues are virtues only in so far as they harmonise with these three elements. Here the author analyses the cardinal, the theological, and other virtues successively to prove his point.] **L. M. Lopatin.** 'A Parallelistic theory of psychical life.' [Advocates theory of Parallelism between psychical and physiological process; but denies that it is complete.] **V. Henri.** 'On the present state of experimental Psychology.' [A short sketch of the origin and progress of this science is followed by a summary of its methods, with details of the various experiments, their results, their classification, and the influence of different mental conditions on these results; and, in conclusion, many questions are noted which have as yet not been investigated.] **P. N. Ardasheff.** 'The Psychology of History.' [Reviewing M. Le Bon's work, *Les lois psychologiques de l'évolution des peuples*, M. Ardasheff, commending him for reducing historical to psychological processes, criticises his overestimation of racial, to the detriment of individual factors.] **M. I. Karinski.** 'The Real and the Imaginary Kant.' [A paper which closes his controversy with M. Vvedenski on this subject.]

September, 1895. **M. Korelin.** 'An Ethical Tractate by Lorenzo Valla.' [An analysis of the work of the celebrated humanist, which was published at Padua in 1831. It was cast in the form of a dialogue between Leonardo Bruno, Beccadelli, and Niccolo Niccoli, and contains a full exposition of Valla's ethical convictions. Bruno, an adherent of Stoicism, expounds that view in the first part. In the second, Beccadelli upholds absolute Hedonism, in the third, Asceticism is maintained by Niccoli. At the close, Tartarini, one of the company, sums up, examining the various arguments, and visibly leaning towards Beccadelli's point of view. The paper goes on to investigate the literary and scientific value of the treatise.] **A. Kozloff.** 'God, as felt and as known; a return to the Ontological proof of God's existence.' [Between the feeling of God, and the knowledge that He exists, there is a passage; but the difference is merely quantitative. God's reality is at once the highest and the most immediate of feelings. Space and time can by no means come into the definition of this idea. We are best enabled to form a notion of God's characteristics, by what we feel of our own substantial individuality and attributes.] **M. Solovieff.** 'On the physical factors of right conduct.' [A criticism of Utilitarianism.] **Trubetskoy.** 'Ethics and Dogmatism.' [This paper is a critical examination of Hatch and Harnack's views as regards the relations between Christianity and Hellenism. The principle and the end of Christianity are contained in the doctrines of the Incarnation and of the Resurrection. Neither of these doctrines can receive a historical explanation, as originating in a development of Hellenic thought. The Nicean Creed is not a product of the Greek mind. Primitive Christianity and the Nicean Creed have the same religious foundation and origin.]

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X.—NOTES.

THE THIRD INTERNATIONAL CONGRESS OF PSYCHOLOGY.

THE third meeting of the Congress will be held at Munich, from August 4th to 7th, 1896. The president will be Prof. Dr Stumpf, the vice-president Prof. Dr Lipps, and the general secretary Dr Frhr. von Schrenck-Notzing. The list of members of the International Committee of Organisation includes the names of many well-known psychologists from England, Scotland, France, Germany, Belgium, Switzerland, Russia, Denmark, and America.

"All Psychologists and all educated persons who desire to further the progress of Psychology and to foster personal relations among the students of Psychology in different nations are invited to take part in the meetings of the Congress."

On receipt of the subscription money (15$.) a card will be sent to every member entitling him to attend all meetings and festivities, and to receive the daily journal *Tageblatt*, and one copy of the Report of the Congress.

The languages used at the Congress may be German, French, English, and Italian. The meetings will take place at the Royal University.

The length of the papers or addresses is limited to 20 minutes, and a short abstract of their contents should be sent to the Secretary before the beginning of the Congress, for distribution among the audience.

Psychologists who intend to offer papers or addresses at the Congress should state the subjects of their communications and send written abstracts of them to the Secretary's office (Munich, Max-Josephstr. 2) before May 15th, 1896.

Lodgings should be secured in advance, as the Munich hotels are generally crowded in the beginning of August.

Information about hotels, pensions and private lodgings will be given to members of the Congress at the office of the "Verein zur Förderung des Fremdenverkehrs."

The Secretary's office will be at the Royal University (Ludwigstrasse 17) during the Congress, from August 3rd onward.

The programme of work is as follows:

I. Psychophysiology.

(Prof. Rüdinger, Prof. Graetz, and Privatdocent Dr Cremer will give all information concerning this part of the programme.)

A. ANATOMY AND PHYSIOLOGY of the brain and of the sense-organs (somatic basis of psychical life).

Development of nerve-centres; theory of localisation and of neurons, paths of association and structure of the brain.

Psychical functions of the central parts; reflexes, automatism, innervation, specific energies.

B. PSYCHOPHYSICS. Connexion between physical and psychical processes; psychophysical methods; the law of Fechner. Physiology of the senses (muscular and cutaneous sensibility, audition, light-perception, *audition colorée*); psychical effects of certain agents (medicines). Reaction-times. Measurement of vegetative reactions (inspiration, pulse, muscle-fatigue).

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II. Psychology of the normal individual.

(Prof. Lipps, Privatdocent Dr Cornelius, and Dr Weinmann will give all information concerning this part of the programme.)

Scope, methods and resources of Psychology. Observation and experiment.—Psychology of sensations.—Sensation and idea, memory and reproduction.—Laws of association, fusion of ideas.—Consciousness and unconsciousness, attention, habit, expectation, exercise.—Perception of space (by sight, by touch, by the other senses); consciousness of depth-dimension, optical illusions. Perception of time.

Theory of knowledge. Imagination. Theory of feeling. Feeling and sensation. Sensual, aesthetical, ethical and logical feeling. Emotions. Laws of feeling.—Theory of will. Feeling of willing and voluntary action. Expressive movements. Facts of ethics.—Self-consciousness. Development of personality. Individual differences.

Hypnotism, theory of suggestion, normal sleep, dreams.—Psychical automatism.—Suggestion in relation to paedagogics and criminality; paedagogical psychology.

III. Psychopathology.

(Prof. Dr Grashey, Dr Frhr. v. Schrenck-Notzing, and Edm. Parish will give all information on this part of the programme.)

Heredity in Psychopathology; Statistics.—Can acquired qualities be transferred by inheritance?—Psychical relations (somatic and psychic heredity), phenomena of degeneration, psychopathic inferiority (insane temperament).—Genius and degeneration; moral and social importance of heredity.

Psychology in relation to criminality and jurisprudence.

Psychopathology of the sexual sensations.

Functional nerve-disease (hysteria and epilepsy).

Alternating consciousness; psychical infection; the pathological side of hypnotism; pathological states of sleep.

Psychotherapy and suggestive treatment.

Cognate phenomena: mental suggestion, telepathy, transposition of senses; international statistics of hallucinations.

Hallucinations and illusions; imperative ideas, aphasia and similar pathological phenomena.

IV. Comparative Psychology.

(Prof. Dr Ranke, Dr G. Hirth, and Dr Fogt will give all information in this department.)

Moral-statistics.

The psychical life of the child.

The psychical functions of animals.

Ethnographical and anthropological psychology.

Comparative psychology of languages; graphology.

Those who desire further information should apply to Prof. Sidgwick, Newnham College, Cambridge, or to Prof. Sully, 1, Portland Villas, East Heath Road, Hampstead, N.W.

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MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY.

I.—THE CONCEPTION OF IMMORTALITY IN SPINOZA'S *ETHICS*[1].

BY A. E. TAYLOR.

WE shall find it convenient, in examining the vexed problem of Spinoza's doctrine of the eternity of the mind, to take as our starting-point the brief abstract of his views given in the "Short Treatise of God and Man," which, in all essentials, anticipates the fuller discussion of the *Ethics*. What we are there told (see especially *Korte Verhandeling*, II. 23) amounts to this. The "soul" is an Idea in the "thinking thing" which corresponds to the existence of some object in "Nature," or—as Spinoza would have said at a later stage of his thought—the mind is an Idea in "God" corresponding to and bound up with the presence in Him of a particular modification of the attribute of extension. Consequently, the continued existence of the soul depends in the first instance on the continued existence of the thing or body of which it is, in Spinozistic language, the "Idea"; and it would seem to follow at once that any disturbance of that proper balance of motion and rest which, according to Spinoza, constitutes the identity of a human body sufficiently extensive to put an end to the existence of a human organism, as such, must also terminate once for all the existence of the corresponding soul. With the transformation of the elements which have hitherto combined to form a human

[1] Read (in substance) before the Society of Historical Theology, Oxford, Feb. 6, 1896.

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body into some fresh form of extended existence there must necessarily be conjoined the transmutation of the corresponding "Idea in the thinking thing," which has till now been the "soul" of that body, into some new and non-human shape answering to the change in the body. From this general doom of death, however, Spinoza indicates a way of at least partial escape which is open to all who think fit to avail themselves of it. That way of escape is no other than the love of God which arises from true and adequate knowledge. For, with increasing understanding of the nature of God—or, what for the Spinozist is the same, of the Universe and of our own place in it—comes a truer sense of the relative value of things, and a growing freedom from the impotent passions and irrational aims and purposes of the natural man. To understand the order of the Universe aright means to acquiesce in it; to know our own place in it and to estimate rightly our own powers is to be freed from the alternating tyranny of vain hopes and foolish despondencies, and so to be, as far as a man may, happy. Hence Spinoza can maintain that it is by means of true and adequate ideas of the world and of ourselves and the moral freedom they bring in their train that it is possible for the soul to contract a union with God which is no less indissoluble than its original union with that particular mode of extension that we call its body. And so, we learn in the "Short Treatise," while the soul, in so far as its existence depends on that of the body, shares the mortality of the latter, yet in the degree in which it is also at the same time "united with" God who is eternal and unchangeable, it shares His permanence and immutability. In the above *résumé* of Spinoza's doctrine as it appears in the "Short Treatise" we may specially notice the following salient points, all of which will meet us again in the *Ethics*.

(1) The union of the soul with God and its consequent deathlessness in no way interfere with the rigid parallelism of soul and body which requires that in some sense both shall be alike mortal.

(2) The deathlessness asserted by Spinoza, whatever its precise nature, is treated throughout as a kind of life to be entered on and enjoyed here and now, not as something for which we must wait till death or the next world.

(3) It is not conceived of, as in the current belief of Christianity, as equally and originally inherent in all mankind; it has to be acquired by each man for himself, and may be acquired by different men in very varying degrees.

(4) The way to obtain this "Immortality" (onsterfelijkheid) is the formation of true and adequate Ideas.

For a fuller statement of these doctrines and a more detailed

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account of the immortality here promised we must now turn to the text of the *Ethics*. And in doing so we shall at once be struck by a change in terminology which is probably, as Martineau has remarked, significant. In the *Cogitata Metaphysica* Spinoza had spoken, in accordance with ordinary usage, of the proofs of our immortality, and throughout the "Short Treatise" we find him using similar language (de Ziele, Onsterfelijkheid). In the *Ethics* both words have finally disappeared, and we now hear only of the mind and the mind's eternity. It is just possible that the use of *mens* rather than the more familiar *anima* may have no special importance. Spinoza prefers, even in the *Cogitata*, to talk of the mind rather than the soul[1], and though the Dutch version in which the "Short Treatise" has come down to us reverses this usage, the change may, of course, be due to the translator. But there can be little doubt that the substitution of "eternity" for "immortality" indicates a conscious endeavour to avoid misleading associations. For the eternity of the human mind as set forth in Spinoza's *Ethics* is, as we shall see, something very different from what is ordinarily understood by the phrase "immortality of the soul." Our first step towards forming a positive conception of what it is will naturally be to define our terms. We must ask, first, what sense we are to put on the words "eternity," "eternal," and next, what we are to understand by the human mind.

A. Eternal, eternity. Spinoza is careful to warn us that we must not fall into the vulgar error of confusing eternity with indefinite duration. Duration is indeed the direct antithesis to eternity. The account of the latter, as given in the eighth definition of the first part of the *Ethics*, reads as follows. "By eternity I understand existence itself in so far as it is thought of as necessarily following from the mere definition of the eternal thing" (*quatenus ex sola rei aeternae definitione necessario sequi concipitur*); and we are further told in a footnote to this definition that "such existence, as for instance that of the essence of a thing, is thought of as an eternal truth, and consequently cannot be explained in terms of time or duration, even if that duration be conceived of as unbounded in both directions." Eternity is thus for Spinoza identical with scientific necessity, and to think of a thing as "eternal" is to perceive it, not as an inexplicable and isolated event or phenomenon, but in its various intelligible relations to the rest of the Universe as an integral and indispensable factor in the whole. It is in this sense that God (I. 19) and each of the "attributes" of God are said to be eternal. For God—or the

[1] But for the use of "*anima*" cf. *Cog. Met.* II. 12 animam immortalem esse ex legibus naturae clare sequitur.

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Universe, is the *causa sui*, the self-existent whole whose supreme reality is the ground and source of all subordinate and derived existence. Again, each of the attributes of God taken singly is eternal. This follows easily enough from the definition of an attribute (I. def. 4) as that which for the perception of the intellect constitutes the essence of a substance. Extension and thought—to take the two attributes which alone are known to us—are eternal, not because, so far as we can tell, both have existed and will exist through an indefinite period of time, but because they are, so to speak, ultimate and irreducible terms in our apprehension of the Universe; (cf. the already quoted definition of "*attributum*,") factors in Reality into which everything else can be resolved, but which cannot themselves be explained in terms of any kind of being still more simple and more universal. (In Spinozistic phrase each of them is infinite *in suo genere*.) Their "eternity" is only another name for the double fact that everything else can be resolved into some combination of modifications of them, while they themselves cannot be resolved into anything else, in short, for the necessity we are under of falling back upon them and their characteristic properties as our sole basis of explanation when we would explain anything whatever. We further learn (I. 21, 22) that not only the divine attributes themselves, that is, the ultimate irreducible terms, be they what they may, to which the understanding can trace the contents of the world (*facies totius universi*), and of which we only know the two already specified, thought and extension, but also any modification of an attribute, the existence of which can be either directly (I. 21) or mediately (I. 22) demonstrated from the general character (*absoluta natura*) of that attribute, may be called eternal. In a word, eternity is for Spinoza, as I have already said, practically equivalent to rational necessity, and to exhibit scientifically the systematic relations in which any aspect of reality stands to other aspects and to the whole system is to establish its eternity. All this becomes if possible even clearer when read in connection with the epistemology of the second part of the *Ethics*, particularly with the famous Spinozistic conception of the knowledge of things "*sub specie aeternitatis*." The way in which this conception is originally introduced is especially instructive. By proposition II. 44 we are taught that it is characteristic of reason (*de natura rationis*) to look on everything as necessary, not as contingent, and the second corollary to the proposition runs "*de natura rationis est res sub quadam aeternitatis specie percipere*." The proof of this is derived from the preceding proposition by the simple expedient of substituting "eternity" for "necessity" as an equivalent term.

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How natural and easy such a substitution is one expression which occurs in the course of this demonstration will shew. In speaking of certain universal properties of things which, as he holds, cannot be thought of other than adequately, Spinoza says that they are conceived "*absque ulla temporis relatione*," and consequently "*sub quadam aeternitatis specie*." The contrast is evidently between such loose personal recollections as make up the content of the average uninstructed man's thinking and the systematic and orderly knowledge of the man of science. For the former each object or phenomenon in nature derives its interest and its place in the body of thought mainly from accidental associations with particular moments of his own experience; in the codified thought of the latter time, as a factor in the universal judgment, has disappeared. Thus a thunderstorm, to take a simple example, reminds the average man of "that terrific storm of three years ago when Mr *A*'s house was struck;" to the scientific mind on the other hand it suggests a series of propositions about the nature and behaviour of electricity with which the temporal relations of before and after, as such, have nothing to do. A typical and familiar case of this knowledge "under the form of eternity" may perhaps be said to be that of pure mathematics as a body of truths whose universal and abiding validity is entirely independent of any considerations of time. And thus Spinoza's appropriation of the term "eternity" to denote rational necessity furnishes at once an interesting parallel with the language of the *Posterior Analytics* and a brilliant anticipation of one of the most characteristic doctrines of modern scientific logic. (Cf. *e.g.* Bosanquet, *Logic*, I. 273. "The order of succession... disappears in the significance of a positive systematic connection." "Time...is not a form which profoundly exhibits the unity of things.")

To this account of eternity I will only append two remarks, to the first of which I would invite special attention, as a due apprehension of it is absolutely essential to the correct understanding of Spinoza's view.

(1) We cannot too carefully lay it down that, though for Spinoza duration is no part of the definition of eternity and cannot of itself constitute it, yet eternity does and must entail as a consequence some kind of endless duration. The proof that this is so for Spinoza is afforded by numerous passages scattered up and down his writings, of which I will here quote only sufficient to establish the general principle, leaving for future consideration those sentences in *Ethics*, Part v. which directly assert its application to the human mind. To begin with then, we read at the end of the "Short Treatise" in set

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terms of the proof of the "*eternal* and permanent *duration* of our understanding" ("gelijk wy hier ook mede, en dat op een andere wijze als te vooren, hebben bewezen de *eeuwige* en bestandige *duuring* van ons verstand." *Korte Verhandeling*, II. 26 *ad fin.*) Again in a proposition (I. 21) of the *Ethics* of which we have already made some use we are told of the modifications which can be deduced *ex absoluta natura alicuius attributi Dei* not only that they are "eternal" but also that they have *always* of necessity existed (*semper* existere debuerunt), with which we may compare the statement in *Cogitata Metaphysica*, I. 4, that duration *a tota alicuius rei existentia non nisi ratione distinguitur*. That some eminent critics of Spinoza (*e.g.* Martineau) have overlooked this important point is probably due to their transferring to *duration* the language which Spinoza uses of *time*. But we cannot too strongly insist on the persistence with which he distinguishes the two conceptions. It is not *duration*, as such, but *time* of which he says in *Cogitat. Met.* I. 4 that it is a *merus modus cogitandi*; it is relation not to *duration*, but to *time*, which is in the *Ethics* the distinguishing characteristic of imperfect thought[1]. So in the important letter which appears as no. 36 in the Land and Van Vloten edition of Spinoza, duration is recognised as a quality of extended things the defect or brevity of which constitutes a form of imperfection, "*extensio solummodo respectu durationis, situs, quantitatis, imperfecta dici potest; nimirum quia non durat longius, quia suum non retinet situm, vel quia maior non evadit.*" And in the no less important letter to Ludwig Meyer (Land and Van Vloten, 12) we find a distinction clearly drawn between duration itself and the conception of it considered in abstraction *a modo quo a rebus aeternis fluit*. Thus abstractly considered *duration* becomes *time*, just as quantity considered in abstraction from substance becomes abstract *number*; and it is not quantity or duration themselves which are for Spinoza unrealities, but the false or abstract conceptions of the one as *mere* number and the other as *mere* lapse of time. Duration itself, like quantity, is a "*substantiae modus*," that is, a real quality or property of things: what is arbitrary and unreal (*ens rationis seu imaginationis*) is apparently the conception of real duration as made up of *moments* (*ubi quis durationem abstracte conceperit eamque cum tempore confundendo in partes dividere inceperit* etc.) and, I suppose also, the arbitrary selection of one of these moments as a *present* or starting-point from which to reckon in opposed directions. So that Spinoza's view of duration seems to answer to his well-known view of extension, according to which it is

[1] For the indication of the two following passages I am indebted to Mr F. H. Dale of Merton College; I gladly acknowledge the debt.

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not the extended, but the abstract conception of extension as composed of *discrete parts* which is unreal (see *Ethics*, I. 15, Scholium). And the connection of eternity with duration can be further upheld by general metaphysical considerations. For it is abundantly clear that, while mere persistence cannot prove necessity, that which does not succeed in persisting somehow has not established its claim to be regarded as necessary. And if it be said that in the end everything is necessary, no matter how transient its existence, it is equally true that in the end, under strange disguises and marvellous transformations, everything persists.

(2) The second remark we have to make is that in the last resort nothing is absolutely eternal in its own right except God or the Universe itself. For by I. 24—a proposition of which I need not supply the proof—"the essence of the things created by God (*a Deo productarum*) does not necessitate their existence" (*non involvit existentiam*). Their essence—as following from and illustrating certain general laws—is a necessary truth (I. def. 8), their existence is not.

B. The Human Mind. The Human Mind (*Ethics*, II. Axiom 1) falls under this head of *res a Deo productae*, and any given individual may consequently have a beginning or end of existence. (*Ex naturae ordine tam fieri potest ut hic et ille homo existat quam ut non existat.*) There is, indeed, a sense (II. 8) in which the Idea, or modification of the attribute of thought, which constitutes the individual's mind, may be said to be existent in God before the individual as such has begun to be, but only in the same way in which the corresponding mode of extension, which we know as the individual's body, may be said to be already contained in the *attribute* of extension, or—to simplify Spinoza's geometrical illustration a little—as each of an indefinite number of diameters may be said to be contained in a given circle before any one of them has been actually drawn (II. 8, Schol.). The actual existence of the individual mind *as such* (II. 11) depends on and begins with that of the corresponding body. For it is part of Spinoza's characteristic doctrine of parallelism that along with the formation of any new modification of extension, or of any other attribute of God, there must always go a corresponding modification of the attribute of thought, or—as he otherwise calls it—an Idea in God of the former modification. Every extended thing is consequently said (II. 13, Schol.) to be, in its own degree, animate, and the prerogative of the Human Mind over the 'minds' of other things consists only in (1) the superior organisation of the body which it inhabits, and (2) consequently, as we shall see, in its greater capability of *adequate* thinking. We

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may say, then, (1) (Prop. 11) that the actual existence of an individual human mind, as such, depends primarily on, and consists in, the presence in God of an idea corresponding to some individual thing,—that is, some particular modification of one of His other attributes, and (2) (Prop. 13) that the particular thing in question is that particular mode of extension which constitutes the human body. From this it will further follow, (1) that the more readily a body responds to and reacts on stimuli of every kind, the more easily will the corresponding mind receive and retain perceptions of every kind (Prop. 14), and also (2) that (II. 17 and II. 26) the original perceptions of the human mind indicate rather the effects produced on its body by other things than the veritable nature of those things themselves as they are "in reality" or "in God." Thus, to take Spinoza's own example, Paul's idea of Peter throws more light on the workings of Paul's psychical and physical organism than on the real character of Peter. Or, if one may be allowed to stoop to an illustration which is perhaps a little ridiculous, the views of a 'Primrose Dame' on the character of Mr Gladstone are more important for our estimate of the lady than of the statesman. It also follows (3) that things will group themselves, for the intellect "unpurified by science," not so much according to the systematic causal and other relations which they bear to one another in virtue of their quality, and the places they fill in the general scheme of the world, as according to the external, and—if I may use a slightly inaccurate but highly convenient expression—accidental conjunctions in which they have been presented to the individual in the course of his personal experience. Thus the content of his mind will be, in the main, a body of fortuitous associations and personal reminiscences in which the real character of the things involved only here and there succeeds in shimmering through the clouds of blind prejudice and hazy recollection. This loose conglomeration of disconnected or mistakenly connected observations—grouped for the most part according to the order in time of the individual's experiences—Spinoza regards as the lowest and most imperfect grade in human thinking. He commonly calls it "imagination," and hardly ever mentions it without a reference to "*memoria*"—personal reminiscences—as its basis. At the opposite pole stands that true and intuitive perception of the scientific relations of phenomena and their position in the general order of things which is variously called by Spinoza "the third kind of knowledge," "the knowledge of things under the form of eternity," "the complete agreement of the Idea with its ideatum," "the knowledge of things as they are in themselves," or "in God." Into the details of Spinoza's well-

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known and important theory of the three (or, following the "Tractatus de Intellectus Emendatione," the *four*) degrees of knowledge space and the scope of this paper will not allow me to enter. I will therefore only add one or two remarks on the special characteristics of the highest form of knowledge which may throw some light on the passage from the "Short Treatise" with which the present essay opened, as well as on the propositions from the Fifth Part of the *Ethics* which we shall directly have to examine. We may then just note in passing (1) that the possession of a true or adequate idea—that is, of knowledge of the second or third kind—is always accompanied by the consciousness of its adequacy: *qui veram habet ideam simul scit se veram habere ideam* (II. 42), a point to which we shall have to come back. (2) The highest and most adequate form of knowledge—*i.e.* knowledge of the third kind—is *concrete* and *intuitive*. It consists not in the mere apprehension of abstract general principles,—knowledge of the second kind; that, though also in its way both "true" and "adequate," stands altogether on a lower footing. Thus—to take an example—the ideal of knowledge is only very imperfectly realised in the apprehension of the abstract truth of the Uniformity of Nature, or, let us say, the Omnipresence of Evolution. Our knowledge only becomes fully "adequate" or "eternal" when we perceive *how* each particular department of reality sustains its place in the general scheme, or falls into line with the whole. So again it is not knowledge of the Human Mind "under the form of eternity" to realise merely that it somehow, like everything else, is dependent on and related to God; we must be able to see, as the concluding propositions of the *Ethics* will endeavour to make us see, just *what* the relation is, and in consequence, just what is the real place and significance of our mind in the Universe.

(3) The contrast between the mind possessed of "adequate" ideas and the mind which remains in the half-lights of imagination will give us by anticipation some insight into the meaning of that "Union with God" which we met in the extract from the "Short Treatise" and shall meet again in the Fifth Part of the *Ethics*. One might at first be inclined to suspect inconsistency in a philosophy which begins by deriving the human mind, as well as everything else, as a necessary consequence from the nature of the divine attributes, and then goes on to speak of a "Union with God," peculiar to the mind. which one man may attain more completely than another, The difficulty vanishes, however, when we reflect on the nature of an adequate Idea and on the self-consciousness which, as we have seen, always accompanies it. It is true that everything

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and everybody is, in some way, a part of God; but the majority of things and of men are quite unconscious of their high dignity. Spinoza would hardly have gone more than half-way with Shelley (*Epipsychidion*, 128) in his famous saying about "the spirit of the worm beneath the sod." The thinker of adequate Ideas under the form of eternity, on the other hand, sees things "as they are in God"; he rethinks Ideas which may be said to form an integral part and parcel of the eternal "*intellectus infinitus Dei*," and in doing so is fully alive to the fact that he is doing so. Thus, while the ordinary man may be said to be the unconscious and poverty-stricken heir to an unoccupied estate, the man of true and adequate thoughts is in the position of the heir who has come into actual possession and fruition of his own. There are, no doubt, difficulties which may be raised about the consistency of this account with some of Spinoza's other statements about the *intellectus Dei*, and one of these difficulties we shall have directly to face, but on the whole the above exposition seems fairly to represent the meaning of his language about Union with God.

On the ethical effects of adequate thinking as the source of freedom from the domination of the passions and consequent happiness there is no need for me to dwell here. Important as those results are, they are, as such, confined to this life and concern the soul only in so far as it is considered in connection with the body. For my purpose—which is to examine the theory of the "duration of the Mind out of relation to the body"—the main results of *Ethics*, Parts III. and IV., may be taken pretty much for granted. I will therefore pass without further delay to the group of propositions in Part V. where the mind's eternity is affirmed and established in detail. These propositions (v. 21–v. 41) form a section by themselves in Spinoza's work, and present, perhaps, more difficulty than any other part of the treatise. Space alone—to say nothing of other limitations—will prevent my doing more now than indicating in a rather general way what I take to be the purport of them. In doing this there are two opposing views, against both of which I have something to urge. The first of these views is that which sees in these propositions something like a promise of what is ordinarily understood by conscious personal immortality. Though this view has in the past been held by competent authorities, it has, I think, been finally disposed of by the investigations of Martineau and Pollock. If any direct refutation is needed from me, it should be enough to refer to the whole tenor of Spinoza's thought in general, and, in particular, to Prop. v. 21, by which "imagination" and memory are shewn to be possible only so long as the body

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continues in existence. This is, indeed, no more than we could have inferred for ourselves from the contrast already established between imagination and memory, which contemplate things and events "*cum relatione ad tempus*," and adequate scientific thought, for which things appear as they are, "*sine ulla temporis relatione*." But without imagination and without the least vestige of personal recollection, how much individuality is left? And when we further add Prop. v. 34, by which it is shewn that all emotions other than the eternal 'intellectual love of God' also cease with the body, it becomes abundantly clear that, whatever survives of us after death, all that now makes *personal* character or idiosyncrasy and distinguishes one man from another has vanished. Hence it is not surprising that able critics have gone to the other extreme and constructed a theory of Spinoza's meaning on the assumption that his "eternity of the mind" has nothing at all to do with any kind of continued existence after death. From their point of view, the strongest emphasis must be attached to the passages which dwell on the difference—which they commonly exaggerate, as I have already pointed out, between eternity and duration, and the difference between the man of adequate and the man of imperfect ideas will consist entirely in the qualitative superiority of the one over the other,—*while his life lasts.* I propose, however, to shew that this view also, though nearer the truth than the former, yet overshoots the mark. While it is most indubitably true that the essential and fundamental characteristic of the "eternal" life, with Spinoza, is its *quality*, yet there is abundant evidence that its attainment somehow entails consequences as to the duration of the mind after death. For, not to recur to the general connection which I believe I have established between eternity and duration, we may note (1) that more than one reference is made to the effect of adequate thinking as freeing us from the fear of *death* (cf. IV. 67) *Homo vere liber nulla de re minus quam de morte cogitat.* v. 38, *quo plures res secundo et tertio cognitionis genere Mens intelligit...eo mortem minus timet.* (2) Further, the language with which Spinoza introduces the section on the Mind's eternity, *tempus est...ut ad illa transeam quae ad Mentis durationem sine relatione ad Corpus pertinent*, and his repeated use of the word "*remanere*" in this connection either mean continued duration of some sort, or they mean nothing. What this language actually means and what it does not we may now learn from a brief survey of the chief propositions on the subject in the order of their occurrence. To begin with then, Prop. 21, by which memory and imagination are excluded from continuance after the death of the body, by itself, as we have

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already seen, proves that Spinoza cannot be thinking of anything that can properly be called "personal" immortality. Prop. 22 takes us a little way, though only a little way, towards a positive conception of his meaning. "Still," he says, "there is necessarily in God an idea which expresses the essence of this and that man's body under the form of eternity." The proof of this is as follows. The essence of the individual's body is a necessary consequence of the nature of God; the body must therefore of necessity be conceived of, if it is to be adequately conceived of, "*per ipsam Dei essentiam.*" There will therefore, in accordance with the doctrine of the parallelism between the divine attributes, necessarily exist in God, in so far as He is conceived of under the attribute of thought, an Idea which expresses the essence of the individual's body—as indeed there will be a similar Idea of everything else which follows from His nature. (See *Ethics*, II. 8.) That is, in other words, everything, when conceived of as a necessary element in the Universe as a whole, is, in that relation, eternal, and the human mind is no exception. (Compare Green, *Works*, Vol. III. p. 159, Fragment on Immortality.) In Prop. 23 with its important scholium we come to the special application of this important doctrine to the case of the mind. "The human mind cannot be entirely destroyed with the body, but something of it remains which is eternal." For the Idea which is eternally present in God of the essence of the human body is just what, on Spinozistic principles, constitutes the special and peculiar *essence* of the human mind. Thus, even after death, there still remains something "in God" which belongs to the inmost essence of the individual human mind; and, as no finite duration (*duratio quae tempore definiri potest*) can be attributed to the Mind except in so far as it is actually conjoined with the body and consequently subject to the category of *time*, this "something" must be thought of, not under the form of time or duration, but, since it represents a necessary ingredient in the nature of God, as something *eternal*. So that, in some sense or other, there is about every man something deathless and eternal. But this demonstration still leaves the two most important questions which this subject gives rise to without an answer. We still want to know (1) how far we can attribute to the Mind an eternity which cannot with equal reason be asserted of the body, or of any other thing; (2) exactly what the *aliquid aeternum* which survives after our death must be taken to be.

(1) The answer to the first question is already indicated by the most important note which is appended as a scholium to our proposition. Briefly stated, it is this. The special and

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peculiar prerogative of the human mind over all other things is that it alone can *know and enjoy* its own deathlessness. Other things, no doubt (I. 21, I. 22, compared with I. 15), as following of necessity from the attributes of God, or—if we prefer to express ourselves otherwise—as necessary "stages" in the world-process, are equally eternal, but their eternity is unknown to and unenjoyed by themselves. We, on the other hand, as the scholium says, "*sentimus experimurque nos aeternos esse.*" And by our consciousness of our own eternity Spinoza does not mean those vague and only half-rational yearnings and impulses towards the "Infinite"—or rather, the "Indefinite"—to which some attach such importance. A sound philosophy, indeed, cannot be expected to set much store by sensations so ill-defined and misty. What is meant here is something much more intelligible as well as more simple. Our consciousness of our own eternity, in fact, means our capacity for contemplating things in their systematic connections with one another, apart from merely temporal relations, and particularly our ability in our science to work into the fabric of our knowledge things vanished and gone before our birth and things yet to come equally easily with the events of yesterday. "The mind," says Spinoza, "perceives the things which it conceives by the understanding no less vividly than those which it remembers. For the eyes of the mind, by which it sees and observes, are nothing else but demonstrations themselves. And therefore, though we have no recollection of existing before the birth of our bodies, still we feel (*sentimus*) that our mind, in so far as it involves the essence of the body under the form of eternity, is eternal, and that this its existence cannot be defined temporally nor explained in terms of duration." It is thus no ill-defined sentiment but the capacity of becoming what Plato magnificently calls (*Rep.* p. 486) the "spectator of all time and all existence" that constitutes the earnest and certitude of our eternity and gives it its characteristic superiority over such eternity as may be reasonably asserted of a part of inorganic nature, a brute, or even of our own body.

(2) The other question "what exactly is the *aliquid* which survives," is perhaps not answered by Spinoza in so many words, but a review of the remaining propositions of this section of the *Ethics* will, I think, enable us to advance a solution with some confidence. First, then, we have to gain a clearer conception of eternity and the "eternal part" of the mind as they manifest themselves in this present life, and next, on this basis, bearing in mind what has already been established as to the perishability of certain elements of our psychical nature, we ought to

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be able to form a pretty shrewd conjecture as to what is left. Now we find in the series of propositions 24–39 the old doctrine of the "Short Treatise" restated and developed. In the "Short Treatise," it will be remembered, the qualitative characteristics of the Immortal part were two, (*a*) its possession of true and adequate ideas, (*b*) its union, by means of love, with God. The propositions before us aim at establishing the same two points with a further difference in each case. We learn now that the basis of that contemplation of things as they are "in God" in which "standeth our eternal life" is a knowledge of our own *body* "*sub specie aeternitatis*," and that the love of God, which is the only emotion which belongs to the mind *qua* eternal, is an "intellectual" love which is no other than the infinite love with which God eternally loves Himself. A short account of the steps in the argument will make both these conceptions more intelligible. Props. 24, "The better we understand particular things, the better we comprehend God," and 25, "The highest aim and chief virtue of mind is to understand things with the third kind of knowledge"—*i.e.* to trace them as necessary consequences of the nature of one of the divine attributes—are merely introductory to what is to come, and as the proof of them must be obvious to anyone who has followed the argument of this essay up to the present point, they need not delay us. Prop. 26, "The more capable the mind is of understanding things with the third kind of knowledge, the more desirous is it of so understanding them," may also be allowed to pass without comment. Prop. 27 is more important. "From this third kind of knowledge arises the highest possible content of mind" (*mentis acquiescentia*). This follows naturally from what has been already laid down, that to attain this kind of insight into the ways of the world is the supreme endeavour (*summus conatus*, Prop. 26) of the mind; naturally, the gratification of the *summus conatus* produces the *summa quae potest dari mentis acquiescentia*, especially as each adequate Idea is, as we know (II. 43), accompanied by the knowledge of its own adequacy, that is, of the thinker's own perfection (*concomitante idea sui suaeque virtutis*). The *use* of this proposition will be, as we shall find, to establish the connection, which for Spinoza is essential, between full and perfect knowledge and the corresponding emotional state, the "*Amor intellectualis Dei*." In Prop. 29 we are at last face to face with the great paradox of the system. "Whatever the mind knows under the form of eternity it knows, not by conceiving the present and actual existence of its own body, but *by conceiving the essence of its body under the form of eternity*." The meaning of this amazing sentence will best appear if, discarding Spinoza's formal demonstration, we

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go back to certain ideas which we have found underlying the Epistemology of the second part of the *Ethics*. We learned there, it will be remembered, that the immediate object of every idea is some affection or state of the corresponding body (II. 13, II. 19) and that, consequently, in our ordinary perceptions we might be said to be perceiving rather the changes in our own body produced by various objects than the real character of the objects as they are in themselves, or "in God" (II. 16, Coroll. 2). We may now see that the scientific apprehension of things "*ut in se sunt*" equally involves a reference to the body, but of a different kind. In all our statements about the physical world, for instance, there is a tacit but never absent reference to our own organism as a sort of permanent *Schauplatz* or background.

When we speak *e.g.* of the state of things on this earth at some remote period before the appearance of man, or in some obscure nook or cranny of the world where human foot has never trod, what we give as the fact is always what *we* should have seen, had we been there to see it. So with our descriptions of the behaviour of a microscopic animalcule; we narrate what we have seen under the microscope, or what we believe we should see, were our lenses of sufficient power. Apart from this ever-present reference to the standard of the normal human organism every quality in terms of which we can talk about the world as it exists for science becomes unmeaning. For, even if you succeeded in eliminating all so-called "secondary" qualities from your account of the "real" world, you would not have got rid of space and motion, and I suppose no one who understands what he is talking about means by space and motion anything other than the space and the motion which we *see*. Note, however, the difference between this reference of everything to our own body and the former. The uninstructed man's reference is to the *present* condition, or the past condition at some arbitrarily-chosen moment, of his own individual organism; the scientist's reference is to the standard of the normal human organism conceived of as being, without distinction of past, present and future, a permanent constituent of and abiding background for reality. Thus, while the basis of the ordinary man's knowledge, such as it is, of facts, is the knowledge of his own body "*cum relatione ad certum tempus et locum*," the knowledge of the body as involved in the scientist's *Welt-Anschauung* is knowledge "without reference to time," or "*sub specie aeternitatis*." So the distinction between the knowledge which the mind gets of things when that knowledge is based on the affirmation of the actual present existence of the body and the knowledge which is dependent on the affirmation of the "essence of the body under the form of eternity" is that the one takes its stand at a

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particular point of time and space, and so sees all upon which it looks in a perspective which more or less obscures the true outlines of objects; the other is, so to say, raised sufficiently high above the plane in which its objects are contained to take in their relations to one another truly and without distortion, as the eye takes in the view from a balloon. In the one case you have a distorted congeries of personal recollections and experiences, in the other an orderly and digested system of science.

It must also, of course, be remembered that, for Spinoza, to have an idea of a thing involves having an idea of that idea (II. 22), and consequently that adequate knowledge of the body "*sub specie aeternitatis*" includes not only a scientific apprehension of the outer world but also a profound knowledge of your own mind, the self-knowledge which brings sanity of moral purpose and inward quiet. The man who adequately knows his own body knows not merely the true relations of other things to each other, but the place of himself in the world, what his value in the scheme of things, what his power of action and grounds of hope. He knows "what things must, and what things may be;" he has the secret which enables a man, in the great phrase of Lucretius, "to contemplate the All with a mind at peace," and he is consequently strong, as only he can be strong, in the self-mastery and singleness of purpose which such knowledge gives. Prop. 30 takes us yet a step further towards our goal. "In knowing itself and the body under the form of eternity the mind necessarily has knowledge of God, and knows that it is in God and is conceived through God (*scit se in Deo esse, et per Deum concipi*). This follows, of course, from the equivalency, with which we are already familiar, of eternity with the necessity of the divine nature, and of knowledge 'under the form of eternity' with knowledge of things "*ut in Deo sunt.*" The object of restating the proposition in this form is to lead up to the demonstration of the connection between true thinking and the intellectual love of God. This demonstration is given in form in Prop. 32. As has already been shewn, the adequate knowledge of things under the form of eternity yields the highest possible peace and content of mind (Prop. 27), which moreover (Prop. 30) is accompanied by the recognition of God as its cause. Hence, adequate knowledge "*sub specie aeternitatis*" necessarily awakens *love* to God, not in so far as we imagine Him to be present at a given moment, but in so far as we recognize Him to be eternal. Thus this kind of love differs *toto caelo* from gratitude to God for private and personal favours vouchsafed; it arises, altogether apart from any personal reference, from the simple contemplation of the divine nature as it is "eternally," or for science, and it is therefore called by Spinoza, to distinguish it from all

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emotions based on the "passions" which accompany "imagination" and its imperfect ideas—that is, based on *personal* grounds—intellectual. And this intellectual love of God is (Prop. 33) itself eternal. For, by Prop. 31, the mind in knowing anything under the form of eternity is knowing its *own* eternity. Hence it is only in so far as the mind is itself eternal that it can be the source of knowledge under the form of eternity and of the emotions consequent on it. True knowledge and the intellectual love aroused by it belong therefore to the mind *qua* eternal, and only *qua* eternal. They are thus themselves eternal. Further, knowledge *sub specie aeternitatis* and the intellectual love of God are the *only* activities of the mind which are truly eternal. For the former this results from what we have already learned of the perishability of all knowledge based merely on imagination and memory, that is, of all knowledge which is not *sub specie aeternitatis*; for the latter it is proved by Prop. 34, of which we have already made some use; "the mind is subject to the emotions which are grounded on the passions only so long as the body endures." As any and every emotion which arises from imagination,—that is, from any grade of knowledge short of true and adequate knowledge, is by Spinoza said to belong to the mind *quatenus patitur, non quatenus agit*, this at once excludes all and each of the emotions other than the intellectual love of God of which we have just heard. So that the "eternal" part of mind now stands reduced to two elements only, one cognitive and one emotional, the cognitive element being concrete but impersonal scientific truth, and the emotional the calm and acquiescence which such truth produces.

We have now practically completed our task. We have defined the eternal part of mind, and thus arrived at the answer to the question which confronted us a few moments ago, "What is the 'something' that remains when the body is dissolved by death?" The remaining propositions of the closing section of the *Ethics* contain much that is of high interest and would demand separate consideration in a complete account of Spinoza's philosophy. Particularly interesting is the suggestive identification of man's "intellectual" love to God with God's love to man, and of both with God's eternal intellectual love of Himself. All this, however, is nothing more than a fairly obvious deduction from the principles which have been established in the propositions that have already come under review, and contains nothing that could materially affect our decision as to Spinoza's meaning. Still less difficulty will be felt by a reader who has clearly grasped the principle of the parallelism of extension and thought in the statement that "*qui corpus ad plurima aptum habet, is mentem habet cuius maxima pars est*

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aeterna." All that remains for me to do, then, is to attempt such a translation of our present results, so far as they bear on the state of the mind after death, into ordinary non-technical language as may give more definite and tangible sense to what must appear, to a reader who is not intimately acquainted with Spinoza's terminology, slightly vague and shadowy.

We have already abundantly seen what the mind's eternity is like as felt and enjoyed during life; we have now only to ask how we are to conceive of its continuance after death. That it does in some sense continue; *i.e.* that "eternity" does not mean *merely* the highest form of mental activity during the present life, I think I have already proved beyond all reasonable doubt, but I may now further strengthen my case by the citation of three passages which could not well have been adduced at an earlier stage in our enquiry. The first of the three is found in the Scholium on Prop. 34, where we are told that mankind in general, though conscious of their own eternity, confound it with duration and attribute it to memory or imagination, which they believe capable of surviving death. Here it will be observed that the error attributed to the mass of mankind is not that they wrongly think that what is "eternal" remains or persists after death; so far they are in accordance with Spinoza's own language on the subject; but that they (1) think this "survival" *the essence* of eternity, and (2) attribute it to the wrong element in mind. So in the Corollary to Prop. 40 it is laid down that the "part which remains," be it ever so small in respect of the whole mind, is still the "most perfect part," where, as anyone may see, the qualitative superiority of the "eternal" life and its persistence are as clearly distinguished as it is possible for two things to be. Lastly, in the Scholium to this same proposition we have the formal definition of the mind's eternity in these words: "the mind, in so far as it understands (*intelligit*), is an eternal mode of thought which is determined by another eternal mode of thought and this again by another, and so on *in infinitum*; so that all *together* (*simul*) form the eternal and infinite intellect of God," where the last clause seems absolutely to exclude the perishability, in any sense, of the "eternal" mode of thought referred to.

Some difficulty may perhaps arise from a comparison of this Scholium with certain other passages in the *Ethics*. It might be asked how the statement that the sum total of finite minds makes up the infinite intellect of God is consistent with the famous sayings in the Scholium to I. 17, where we are told that God's intellect differs from ours *toto caelo* and that the only point of identity between the two is, like the point of identity between a common dog and the dog-star, their being usually

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called by the same name. And a further difficulty suggests itself about the whole conception when we go on to read the proof given in this same Scholium of the incommensurability of the divine with the human intellect. For the point on which the whole argument turns is the very natural one that an intellect which, like that of God, is the cause both of the essence and of the existence of its objects cannot but be very different from one which is not. Yet how are we to reconcile this explicit recognition of the divine intellect as the sole cause (*unica causa*) of the objects it comprehends with the equally explicit declaration of I. 31 that the "*intellectus actu*," *whether finite or infinite*, belongs not to *Natura naturans* but to *Natura naturata*? I cannot go into these questions here at any length, but I may perhaps be allowed just to indicate what I take to be the way out of the difficulty. To take the second point first. It is clear, I think, that the "intellect" of God of I. 17 is something more than the *intellectus actu* of I. 31, even when the latter is taken to be "infinite." For it is clear from the language of Spinoza's proof of the latter proposition that the *intellectus actu*, even when thought of as infinite, must be taken to mean an understanding which is still distinguished from other forms of psychical life (as *e.g.* will and feeling) to say nothing of the forms of extension or of some third attribute of God. Whereas in God not only the various "modes" of each attribute, but also the infinite attributes themselves, form a perfect unity without distinction of any sort (see II. 7, Corollary). Hence the *infinitus intellectus Dei* cannot be identified with any form of *intellectus actu*, that is intellect as distinguished from and opposed to extension or any other attribute, and the argument of Prop. I. 31 is therefore not applicable to it. And with respect to the other question, the difficulty vanishes, I think, on a second reading. For we must remember that we have no right to assume that *human* minds are the only finite minds in the world. God, we must remember, has an *infinite* number of attributes which are inaccessible to our human perception; and it must follow therefore, on the Spinozistic principle of parallelism, that each modification of each of these —to us—unknown attributes will be attended by its corresponding Idea in God conceived under the attribute of thought, that is, by its corresponding finite "mind." Hence there will be a great deal in the "infinite intellect of God" besides *human* thought. And it is these other hypothetical minds, I suppose, which he means by the "other eternal modes of thought" by which, according to the Scholium on v. 40, the eternal mode of thought which constitutes "our mind" is limited. This interpretation is rendered practically certain by two passages in

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Spinoza's letters[1]. Writing to Oldenburg (Land and Van Vl. XXXII) he expressly says that the difference between the human mind and the *potentia infinita cogitandi* in nature is that the latter "*in se continet totam naturam obiective*," while the former is this same infinite intellect (*hanc eandem potentiam statuo*), but not *qua* infinite and comprehending the universe but *quatenus tantum humanum corpus percipit*. And in the important letter (L. and Van Vl. LXVI) to Tschirnhaus we learn that, though every single thing is expressed in the infinite intellect of God in an infinite number of ways corresponding to the infinite number of attributes, still these infinite "ideas" have no connection with one another, and therefore constitute the mind, not of one, but of an infinite number of beings (*unam eandemque rei singularis mentem constituere nequeunt, sed infinitas*).

How then to restate our results in more modern language? I think, thus. What is meant by the survival of the Mind as "intelligence" is simply the fact that an adequate idea, when once thought, forms a permanent addition to the stock of scientific knowledge in the world. In a way, of course, all emotions and thoughts are eternal, as being the product of one and the same eternal "World-process," but it is only the perfectly adequate scientific formulation of truth which can persist unchanged. Thus, those personal memories and affections which derive all their piquancy and poignancy from the personal reference, perish for ever, as such, at death. Parental or sexual love, *e.g.*, may be a permanent factor in human life, but not the love of this particular parent for this particular child. That derives all its depth from the fact that it is not merely parental love as such, but the love of a particular individual *A* for his own child *B*. Hence, with the death of the persons involved, it too dies. And so with all thought and feeling whose inmost being is bound up with the personality of the subject who experiences them. They depend for their very existence on just those differences which make the existence of one man separate from that of another, and it is for Spinoza not in so far as men are thus exclusive of one another, but only as they can enter into and share a life without personal reference where all meet and are indistinguishably one that they are immortal. So again with honest but defective scientific thinking. The astronomical ideas of Ptolemy or Tycho-Brahe, so far as they contained truth, survive indeed in later science, but only after suffering strange transformations. As formulated and held by those scientists, they have perished

[1] Here, again, I have to express my indebtedness to Mr Dale.

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beyond the power of time to recall. And this utter mortality is to some degree the doom of every man, no matter how great his stock of adequate ideas. For by IV. 4, *no* man can make himself a *mere* home of adequate thought. *Fieri non potest ut homo non sit naturae pars.* And the Corollary is *hominem necessario passionibus semper esse obnoxium;* and to be subject to "passions" is, as we have seen by V. 34, to be perishable at death. But an adequate idea, once thought, takes its place, in the form in which it is thought, as a permanent addition to knowledge. Whoever would think again the adequate geometrical ideas of Euclid or Newton must think them not only in the spirit but in the very shape in which Newton or Euclid thought them. For an adequate idea has a double prerogative over every other factor in the soul's life. In formulating it, he who first does so is rethinking part of the eternal content of the divine intellect in its true form; thus the adequate idea, properly speaking, has had no beginning and will have no end. He is also thinking something which all subsequent human science must rethink after him; hence the adequate idea, because adequate and eternal, is also, so far as it appears in time at all, as a consequence of its eternity, permanent and ever-during. For even human thought is not for Spinoza, as it might be for some philosophers, a merely transient phase of the supreme reality which may sooner or later give place to some newer development, but an abiding and perpetually necessary consequence of the divine nature, an *aeternus modus* of one of the attributes, which consequently *semper existere debet.*

Such a theory of intellectual, or impersonal, immortality is not without its repellent aspects and difficult points. It may be attacked, as by Martineau, on the ground of its failure to satisfy ordinary human yearnings and aspirations. Or it may be assailed more philosophically from the opposite side by one who likes to raise the question whether we have a right to assume, as Spinoza does, that any truth is so true that it can be regarded as a permanent and immutable contribution to knowledge. It may be said that even the most indisputable axiom must be prepared to undergo modification as science grows, or that, if there be "adequate ideas" at all, they will at best be found among the most abstract and empty generalisations of logic, and so fall far short of the concrete fulness which is with him the characteristic peculiarity of knowledge of the third or highest kind.

With Spinoza, however, as with most writers who are really worth a serious study, the task of intelligent interpretation, though harder, is infinitely more valuable than that of facile criticism, even when the critic hits the real blot. Almost more

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than any other modern philosopher, the retiring and unobtrusive man has succeeded in awakening the most opposite feelings and the most ludicrously exaggerated judgments. But it is really a question of only secondary importance whether the great Jew of Amsterdam is for us as for Novalis, a "Gott-betrunkener Mensch," and for Renan the man who "has perhaps had the nearest vision of God," or whether we regard him, to use the more than half ironical expressions of the most illustrious of English philosophers, as a "famous atheist," and his system as the "gloomy and obscure region of hideous hypothesis." The main thing, here as everywhere, is not to judge—that is easy enough—but to make sure that we understand.

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II.—PLATO'S EARLIER THEORY OF IDEAS.

By R. P. Hardie.

I do not intend in the following pages to discuss Plato's Earlier Theory of Ideas in a general and exhaustive way, but only from a special point of view. Plato's metaphysics seems to have been suggested to him primarily by his logical theories, and to be hardly more than a fresh way of stating logical results. Perhaps the best way then of approaching the Theory of Ideas is through Plato's logic, and this is the method which I propose to adopt. Even if this mode of treatment may cause a loss in breadth and completeness, we may at least hope for a gain in simplicity. Further I propose to confine my attention to one passage, chiefly, of Plato's dialogues, the metaphysical parts of Bks. VI. and VII. of the *Republic*. Two special considerations have led me to adopt this plan.

The first is the fact that it is now possible to assume with confidence that the *Republic* is one of the earlier dialogues, though perhaps the latest of these. The determination of the order of Plato's dialogues was originally due to Prof. Lewis Campbell, who, in his edition of the *Sophista* and *Politicus*, published in 1867, maintained that the *Republic* was separated from the *Laws* by a group of dialogues which included the *Sophista* and *Politicus*. This view he supported mainly on philological grounds. It has been corroborated by independent, and much more recent, investigation of a similar kind in Germany, without however winning the assent of Zeller. For the study of Plato the importance of Prof. Campbell's theory cannot be over-estimated. Even if the theory is not absolutely proved, the evidence for it is more than sufficient to justify me in assuming it as a hypothesis to be tested ultimately by the light it throws on the development of Plato's thought. Plainly the duty of a student of philosophy is to accept the decision of scholars on a matter of this kind. Our knowledge of Plato has been sufficiently retarded by the *a priori* dicta of the metaphysicians.

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The second consideration that has led me to devote most of my space to certain passages of the *Republic* is that within the last year or so the attention of students has been directed to that dialogue by the publication of Jowett and Campbell's edition of the *Republic* and of Bosanquet's *Companion to Plato's Republic*. These are both, in the main, commentaries, and are invaluable for the minute study of the text. But it will not be necessary in a paper like the present, which aims at a very general outline of the Theory of Ideas as expressed in the *Republic*, to make many explicit references to them. I shall assume Prof. Campbell's conclusion that the *Republic* is practically a single whole.

I shall have occasion to refer frequently to Mr Jackson's well-known article in the *Journal of Philology*, x., "On Plato's *Republic*, VI. 509 D sqq." Even if one differs from Mr Jackson's conclusions, one must admit the great service he has rendered by his very interesting and novel theories. Many students of philosophy, I fancy, have derived their interest in Plato from the article mentioned and from the series of articles by Mr Jackson in the same journal on the Later Theory of Ideas.

Socrates's contribution to science may be said to have been the invention of a simple kind of argument or regular process of thinking by means of which he tried to make ordinary thought more clear and definite. This art of Socrates was purely practical, a mere *ἐμπειρία* or *τριβή*; no theory of it can be ascribed to him. An attempt to formulate the Socratic art is to be found in a well-known passage of Xenophon's *Memorabilia* (IV. vi. 13): *εἰ δέ τις αὐτῷ περί του ἀντιλέγοι μηδὲν ἔχων σαφὲς λέγειν, ἀλλ' ἄνευ ἀποδείξεως ἤτοι σοφώτερον φάσκων εἶναι, ὃν αὐτὸς λέγοι, ἢ πολιτικώτερον ἢ ἀνδρειότερον ἢ ἄλλο τι τῶν τοιούτων, ἐπὶ τὴν ὑπόθεσιν ἐπανῆγεν ἂν πάντα τὸν λόγον.* In other words, there is a principle or standard (*ὑπόθεσις*) and a reference (*ἐπαναγωγή*) to it of the question in dispute. In general the standard is the definition of a common name, *e.g.* a good citizen is a man who makes the *πόλις*, let us say, stronger than her enemies. What is referred to it is a proposition of the form: *x* is a good citizen. The argument as a whole, since the major premiss can be converted simply, is a syllogism in the mood Barbara. If the *ἀπόδειξις* or demonstration of the point in dispute is expressed in an interrogative form, we have an example of *ἐρωτητική*.

In his earlier period, that is, in the *Republic* and the dialogues that preceded it, Plato developed the Socratic art in two ways: (1) he formulated it and in so doing found an expression for it in terms of metaphysics (the Theory of Ideas): (2) he

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brought it into connection with the science of mathematics. In what follows I propose to verify this statement by an examination of what is perhaps the most important passage in which the Earlier Theory of Ideas is explained, *Republic* 504 D—534 E. But before doing this I will examine *Phaedo* 95 E—105 D, a passage whose connection with the *Republic* has been pointed out and emphasized by Mr Jackson (*J. of P.*, X. pp. 136—138) and by Mr Archer-Hind in his edition of the *Phaedo*, Appendix II. The fact that this connection is not yet perhaps sufficiently recognized and that its interpretation is still disputed (*J. of P.*, XXIII. 45) will perhaps be held to justify further discussion of it.

For the sake of convenience, I will begin by giving an abstract of *Phaedo* 95 E—105 D. Socrates is made to explain how in his opinion Pre-Socratic science (physics and mathematics) had failed to assign adequate causes (*αἰτίαι*) for things, while it destroyed the simpler beliefs of ordinary knowledge. Anaxagoras however was different from the other Pre-Socratics. He held that *νοῦς* is *πάντων αἴτιος* and he might therefore be expected to find the only true cause of things in *τὸ βέλτιστον*. But as a matter of fact Anaxagoras, while using this language about *νοῦς*, fell back on unintelligible (physical) causes which should properly be regarded as secondary causes or conditions. In trying to carry out Anaxagoras's original design, Socrates had however himself failed. Perhaps it was like the case of being blinded by looking directly at the sun instead of investigating it in an *εἰκών* such as a reflection. Perhaps therefore by way of *δεύτερος πλοῦς* we ought to study *τῶν ὄντων ἡ ἀλήθεια* in *οἱ λόγοι*. This method will consist in 'supposing' (*ὑποθέμενος*) in each case the *λόγος* that seems strongest or 'most valid' (*ἐρρωμενέστατος*) and admitting as true whatever agrees with it. This is the kind of explanation or cause invented by Socrates, the familiar method of *εἴδη*; *e.g.* in the case of *τὰ καλά*, the *ὑπόθεσις* that there is something that is *καλὸν αὐτὸ καθ' αὑτό*. Things that are *x* are *x* by *παρουσία* of, *κοινωνία* with, '*x*' (the *εἶδος*). The question as to how it is so Socrates leaves open: only he insists on the primary fact that '*x*' is the sole *αἰτία* why *x*'s are *x*. In respect to each *ὑπόθεσις* there are two perfectly distinct questions: (1) as to the consistency of what springs from it (*τὰ ὁρμηθέντα* or *ὡρμημένα*), and (2) as to the truth or validity of the *ὑπόθεσις* itself. If the *ὑπόθεσις* itself is questioned, the objector must be referred upwards to a *ἱκανὸς λόγος*. Lastly if *y* is contrary (*ἐναντίον*) to *x*, any one of the many *x*'s may be *y*, *i.e.* may share in both *x* and *y*, but *x* is never *y*, is always repellent of it. And further if *z* is always *x*, *i.e.* if *z* is an *εἶδος* falling under *x*, then *z* as well as *x* will repel *y*.

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There are two points on each of which this abstract commits us to a decision in favour of one out of two possible interpretations.

The first is with respect to the πρῶτος πλοῦς, which Plato had been forced to abandon. The interpretation adopted above is due to Mr Jackson (*J. of P.*, x. pp. 136—138) who is followed by Mr Archer-Hind (*Phaedo*, App. II.). All previous commentators (Stallbaum, Ast, Geddes etc.) had apparently identified the πρῶτος πλοῦς with the methods of the physicists and not with the teleological method (hinted at by Anaxagoras) of explaining everything by reference to τὸ ἀγαθὸν or τὸ βέλτιστον. Mr Jackson's view is so convincing as to need no defence.

The second disputable point is the precise bearing of the simile of looking at an eclipse. Mr Jackson's view (adopted in the abstract given above) is that the unsuccessful attempt to investigate τὸ ἀγαθὸν corresponds to looking directly at an eclipse, while the investigation of τῶν ὄντων ἡ ἀλήθεια in λόγοι corresponds to observing an eclipse by means of its εἰκὼν in water. Recently Mr C. E. Campbell (*J. of P.*, XXIII. 45, pp. 77—80) has suggested that the two ways of observing an eclipse correspond, not to the πρῶτος and the δεύτερος πλοῦς, but to two rival methods of prosecuting the latter. Plainly the first step towards deciding this question is to get a clear idea of what the δεύτερος πλοῦς actually was, from the parts of the text that are independent of the simile. This can be done most conveniently perhaps by an examination of Mr Archer-Hind's view as explained in his edition of the *Phaedo*, chiefly App. II.

In Mr Archer-Hind's view the δεύτερος πλοῦς is identified with the study of λόγοι *as distinct from* εἴδη. He says for instance (p. 190), "Sokrates in fact, since he despairs of actually grasping the eternal ideas, of which all natural phenomena are symbols, endeavours to form from those symbols, mental concepts or universals, which shall represent the ideas to him: they are the ideas as reflected in his intelligence," and again (p. 139, note) "If we are asked, why is a rose beautiful?...we shall say it is because the rose partakes of the beautiful. Now it is of course the idea which is the cause of the rose's beauty; the λόγος is not the cause, but it is the conception of the cause which, for fault of direct apprehension of the idea, we have formed by generalisation from particulars. Only when we know the ideas shall we have a true insight into causation; until then λόγοι are the best substitute." But as far as I can see there is nothing in the text to suggest that Plato distinguishes λόγοι from εἴδη. The δεύτερος πλοῦς consists in making certain ὑπο-

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θέσεις, 'assumptions' or 'suppositions.' What is assumed is indifferently described by Plato as a λόγος or an εἶδος, as the following words prove: ὑποθέμενος ἑκάστοτε λόγον (100 A), ὑποθέμενος εἶναί τι καλὸν αὐτὸ καθ' αὑτό (100 B). The most explicit account (in 100 B—101 D) of the δεύτερος πλοῦς is given, not in terms of λόγοι but of εἴδη, which constitute the kind of αἰτία with which the persons of a Platonic dialogue are familiar.

As we should expect, Mr Archer-Hind's view of the πρῶτος πλοῦς depends on his view of the alternative method, and we find him identifying it with a knowledge of the εἴδη as well as with a knowledge of τἀγαθόν. For the εἴδη being rejected from the alternative method *must* find a place in the πρῶτος πλοῦς. The quotations given above make this plain. That the πρῶτος πλοῦς is also identified with the investigation of τἀγαθὸν appears for instance from the following (p. 188): "his hope was to discover τἀγαθὸν καὶ δέον as the ultimate αἰτία; in other words, to construct a teleological theory of the universe. This then is the 'great and wondrous hope,' which the physicists could not gratify, and which he himself failed to fulfil; and this it is for which the method of λόγοι offers a substitute."

We may now return to the disputed question of the simile of the eclipse. Mr Archer-Hind, whose interpretation I will consider first, finds here two chief difficulties.

The first is in the words: τοιοῦτόν τι καὶ ἐγὼ διενοήθην, καὶ ἔδεισα, μὴ παντάπασι τὴν ψυχὴν τυφλωθείην βλέπων πρὸς τὰ πράγματα τοῖς ὄμμασι καὶ ἑκάστῃ τῶν αἰσθήσεων ἐπιχειρῶν ἅπτεσθαι αὐτῶν (99 E). Pp. 191, 192: "Now if we examine the obnoxious sentence, we shall see that it is in itself confused and inaccurate. After τὴν ψυχὴν τυφλωθείην, which gives us the thing symbolised, we have a sudden and perplexing transition to the symbol in βλέπων πρὸς τὰ πράγματα τοῖς ὄμμασι: the mind's eye and the body's eye are jumbled most incoherently together; for the deprivation of mental vision is given as the result of action on the part of the bodily organ. And in the next breath we have ἑκάστῃ τῶν αἰσθήσεων ἐπιχειρῶν ἅπτεσθαι αὐτῶν, which is not even germane to the metaphor. Surely these are two serious defects." P. 135, note: "πρὸς τὰ πράγματα, *i.e.* the ideas themselves." Strictly however it is clear that metaphor enters, not with βλέπων, but with τυφλωθείην; and if, as I have tried to show, the πρῶτος πλοῦς is not concerned with the ideas, τὰ πράγματα cannot be taken as meaning "the ideas themselves." It is possible that there is a reference in τὰ πράγματα to the thing symbolised. But it is simpler to take the words following τὴν ψυχὴν as unmixed metaphor, τὰ πράγματα being simply 'things' (σώ-

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ματα) as opposed to their εἰκόνες, *e.g.* reflections in water. This sentence then merely states that the πάθος of the observer of an eclipse is to be transferred to the soul, and adds a new metaphor. (Perhaps τὰ πράγματα is substituted for τὸν ἥλιον ἐκλείποντα for the sake of the new metaphor.) It is the next sentence that contains the interpretation of the symbol: ἔδοξε δή μοι χρῆναι εἰς τοὺς λόγους καταφυγόντα ἐν ἐκείνοις σκοπεῖν τῶν ὄντων τὴν ἀλήθειαν. λόγοι correspond to the εἰκὼν of an eclipse, and τῶν ὄντων ἡ ἀλήθεια corresponds to the ἥλιος ἐκλείπων itself. And I see no reason why Plato should not introduce a new metaphor. The only possible objection to a new metaphor would be, not that it is not germane to the original metaphor, but that it is unfit to represent what is symbolised.

The second difficulty discussed by Mr Archer-Hind refers to the sentence which immediately follows the simile and qualifies its exactness: ἴσως μὲν οὖν ᾧ εἰκάζω τρόπον τινὰ οὐκ ἔοικεν· οὐ γὰρ πάνυ συγχωρῶ τὸν ἐν τοῖς λόγοις σκοπούμενον τὰ ὄντα ἐν εἰκόσι μᾶλλον σκοπεῖν ἢ τὸν ἐν τοῖς ἔργοις (99 E—100 A). Pp. 189, 190: "Though I admit these concepts are but images of the realities, mind I don't allow that they are so in any greater degree than material phenomena: both in fact are images; but whereas phenomena are the images presented to us by our senses, concepts are the images deliberately formed by our understanding; concepts therefore are more real than phenomena in proportion as understanding is more sure than sense." This interpretation plainly depends on the assumption, which I have tried to disprove, that λόγοι are to be distinguished from εἴδη and are related to them as εἰκὼν to ᾧ ἔοικε. Again Mr Archer-Hind says (p. 136, note): "ἔργα here = the particulars. The word is used because of the familiar antithesis with λόγος; not I think with a view of denoting the particulars as works or products of the ideas whence they derive their existence." But is there any reason why ἔργα should mean anything *but* the familiar antithesis of λόγοι, *i.e.* reality or act as opposed to thought or word? So interpreted ἔργα would = εἴδη, and Plato's intention in qualifying the simile would be to warn his hearers that the distinction between λόγοι and εἴδη is not relevant to his present purpose, that it is not the former that are to be treated as εἰκόνες of the latter, but that both together—λόγοι + εἴδη—are εἰκόνες of τὸ βέλτιστον, the supreme reality.

Mr C. E. Campbell's interpretation must be considered next. He suggests (*J. of P.*, XXIII. pp. 76—80) that the words ἔδοξε τοίνυν...αὐτοῦ at the beginning of ch. XLVIII. refer to the δεύτερος πλοῦς alone, not to the πρῶτος πλοῦς, and

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indicate that there are two possible ways of pursuing the former. And the words taken by themselves may very well have this meaning. But it is difficult to follow Mr Campbell in his account of the actual methods of investigation referred to by Plato. In the first place Mr Campbell seems to identify the study of *εἴδη* with the *πρῶτος πλοῦς*: "The clause *τοιοῦτόν τι...αὐτῶν* must refer to a rival method of prosecuting the second-best course and is not to be regarded as the description of results apprehended from seeking immediate familiarity with the Good itself or its special determinations in the world of ideas, which, as Mr Archer-Hind justly remarks, were regarded by Plato as forms of the *ἀγαθὸν* itself" (p. 77). But, as I have tried to show, this is inconsistent with the account of the *δεύτερος πλοῦς* actually given by Plato, 100 A—101 E. In the second place Mr Campbell supposes what is on his interpretation the inferior method of pursuing the *δεύτερος πλοῦς* to consist in the investigation of particulars. He therefore regards the difficult sentence *τοιοῦτόν τι...αὐτῶν* as not metaphorical and takes *πράγματα* to mean "material particulars and not the ideas." This gives the proportion, *ἥλιος ἐκλείπων* : its *εἰκών* in water = *πράγματα* (material particulars) : *λόγοι*, in respect of 'brightness.' However "on general grounds, as Mr Archer-Hind has pointed out, it is inconceivable that Plato should have spoken of phenomena as dazzling from surpassing brilliance" (p. 79). Therefore *really*, according to Mr Campbell, it is *λόγοι* that are 'brighter' than *πράγματα* and not *vice versâ*. Hence the point of the simile is in the fact that the sun is eclipsed, and its truth is contained in the qualifying clause, *ἴσως μὲν οὖν...ἔργοις*, which practically reverses the original simile. In a word Mr Campbell explains the original simile, which is inconsistent with his interpretation of the passage as a whole, as ironical and to be taken in an opposite sense. This is obviously a dangerous device and I do not think that it is appropriate here. But I do not propose to discuss the general question of the marks by which Platonic irony is to be recognised.

One other point in the summary of *Phaedo* 95 E—105 D given above requires, perhaps, elucidation and expansion. We saw that any *ὑπόθεσις* may be regarded in either of two ways, (1) as to its 'results,' *ὁρμηθέντα*, and (2) as to its validity. In explaining the former Plato uses the following words (101 D): *εἰ δέ τις αὐτῆς τῆς ὑποθέσεως ἔχοιτο, χαίρειν ἐφῆς ἂν καὶ οὐκ ἀποκρίναιο, ἕως ἂν τὰ ἀπ' ἐκείνης ὁρμηθέντα σκέψαιο εἴ σοι ἀλλήλοις συμφωνεῖ ἢ διαφωνεῖ*. Mr Jackson would reject these words, and Mr Archer-Hind, besides making philological objections to them, says that the words *ἕως ἂν...διαφωνεῖ* "are in themselves sheer nonsense. If a hypothesis is proposed to account

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for a given set of facts, we proceed to observe not whether the facts are consistent with each other but whether they are consistent with the hypothesis." This objection seems to me to confuse precisely the two questions which Plato insists should be kept separate. For the agreement of the hypothesis with facts belongs to the other question, the question of the validity of the hypothesis, and has nothing to do with the consistency of the results derived from that hypothesis. Plato is not thinking of an ὑπόθεσις in the sense in which 'hypothesis' is used in inductive science, but primarily of the consistent use of a common name. The ὑπόθεσις is the definition of the common name, by means of which definition we are able to use the name in such a way that we never contradict ourselves, *i.e.* never say that a particular thing both is and is not *x*. Thus the object of the definition may very well be described as consistency with one another of the results of the definition. If the matter is to be illustrated from science, one would most naturally find an example of what Plato means, not in inductive science, but in algebra, where certain laws (*e.g.* $ab = ba$ or $a\beta \neq \beta a$) are assumed, and the sole test is consistency. These are not so much laws as definitions, at once of the fundamental or simple operations of the science and of the symbols that are subject to these operations.

Our results, so far as we have gone, may be summed up as follows. The peculiar method of Plato is the method of Ideas. λόγος and εἶδος mean the same thing expressed in terms of thought or language and of reality respectively[1]. It follows from this fundamental identity that the relations among εἴδη are the *same* as the relations among the corresponding λόγοι, and again that the relation of '*x*' to the particular *x*'s, which is described vaguely in the *Phaedo* as παρουσία, κοινωνία, is the same as that between the definition of *x* and the particular propositions of the form 'this is *x*.' A λόγος (or εἶδος), further, is the germ of scientific knowledge, that is, of knowledge which is self-consistent. If a λόγος is attacked, it must be brought under a higher λόγος, which is regarded by the objector as ἱκανός. And plainly the doctrine of the *Phaedo* implies that corresponding to τὸ βέλτιστον there is a λόγος which is ἱκανὸς without qualification. In this way the *Phaedo* undoubtedly implies that τὸ βέλτιστον is an ἰδέα in the widest sense of the

[1] Mr Archer-Hind notes the approximation to Aristotelian doctrine in the use of οὐσία in *Laws* 895 D where οὐσία, λόγος and ὄνομα are distinguished (*Phaedo*, p. 136, note). It is difficult to see how he comes to think that Plato opposes λόγος to εἶδος, whereas in Aristotle they are practically convertible; *e.g.* the soul is defined by Aristotle indifferently as οὐσία ὡς εἶδος, as οὐσία ἡ κατὰ τὸν λόγον and as λόγος, of body.

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word. But at the same time from another point of view the *Phaedo* opposes εἶδη, in a narrower sense, to τὸ βέλτιστον which is at once an idea and more than an idea.

The passage of the *Republic* (504 D—534 E), which I propose to examine, can be divided readily into four sections: (*a*) the Similitude of the Sun, 504 D—509 B: (*b*) the Divided Line, 509 C—511 E: (*c*) the Cave, 514 A—521 B: (*d*) the stages in the education of the guardian, explained with reference to the parts of the Divided Line, 521 C—534 E.

The Similitude of the Sun is introduced in the following way. In the fourth book the virtues of the guardian had been explained in outline. Plato now, in the sixth book, endeavours to trace these virtues to their central principle, τὸ μέγιστόν τε καὶ μάλιστα προσῆκον μάθημα. This is familiar to his hearers: πάντως αὐτὸ οὐκ ὀλιγάκις ἀκήκοας.....ὅτι γε ἡ τοῦ ἀγαθοῦ ἰδέα μέγιστον μάθημα, πολλάκις ἀκήκοας, ᾗ δίκαια καὶ τἄλλα προσχρησάμενα χρήσιμα καὶ ὠφέλιμα γίγνεται (504 E, 505 A). Jowett remarks: "It is remarkable that although Plato speaks of the idea of good as the first principle of truth and being, it is nowhere mentioned in his writings except in this passage" (Introduction to translation of *Republic*, p. xcviii. Bosanquet, p. 238). But we can have no difficulty in finding here, with Mr Jackson (*J. of P.* x. p. 137), a reference to the passage of the *Phaedo*, which I have discussed above, for we have just seen that there the idea of the good is at least implied. The change of words (from τὸ βέλτιστον to ἡ τοῦ ἀγαθοῦ ἰδέα) is perhaps what we might expect, for, as we shall see, the drift of the present passage is to connect the supreme idea, more explicitly than in the *Phaedo*, with the lower εἶδη. In fact τἀγαθὸν and ἡ τοῦ ἀγαθοῦ ἰδέα are here used indifferently, while in the *Phaedo* only the former occurs. Here too, as in the *Phaedo*, Plato at first avoids a direct account of the ἰδέα τοῦ ἀγαθοῦ. In the earlier dialogue he explained how, when he failed to discover τὸ βέλτιστον itself, he had fallen back on the study of εἴδη. Here his object is different. He wishes to insist on the necessity of a knowledge of the supreme 'idea,' and therefore he modifies his earlier similitude. Using again an illustration drawn from the sense of sight, he now points out that sight differs from the other senses in being more complex. Besides faculty and object there must be light or the sun. This in sight corresponds to the ἰδέα τοῦ ἀγαθοῦ in thought. In the *Republic* Plato emphasizes the function of the sun itself in the visible world; in the *Phaedo* the function of an image of the sun.

The ἰδέα τοῦ ἀγαθοῦ then on the one hand causes ἐπιστήμη in the faculty, on the other, ἀλήθειά τε καὶ τὸ ὂν in τὰ νοούμενα. And, Plato adds, just as the sun is the cause of γένεσις

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καὶ αὔξη καὶ τροφὴ to *τὰ ὁρατά*, so the *ἰδέα τοῦ ἀγαθοῦ* is the cause of *τὸ εἶναί τε καὶ τὸ ὄν* to *τὰ νοούμενα*. It is obvious that this extension of the simile is somewhat forced. The words *γένεσις καὶ αὔξη καὶ τροφὴ* suggest chiefly organic creatures, whereas *τὰ ὁρατὰ* should include indifferently the organic and the inorganic. In fact, in the extension of the simile what is illustrated is really clearer than the illustration. The effect of the extension is simply to emphasize the doctrine that 'existence' corresponds unconditionally in the world of ideas to intelligibility or truth, *εἶδος* to *λόγος*, reality to validity. While the *ἰδέα τοῦ ἀγαθοῦ* is the cause of *οὐσία*, it nevertheless, Plato explains, is not itself *οὐσία* but 'exceeds it in priority and power.'

It is necessary to notice further that the sun is described by Plato not only as like the good but also as its product (*ὃς δὲ ἔκγονός τε τοῦ ἀγαθοῦ φαίνεται καὶ ὁμοιότατος ἐκείνῳ...*506 E). As Mr Bosanquet points out (p. 241) the notion of effect is associated in Plato's mind with the notion of something *made like* the cause. Thus the sun is not used in the present passage merely as an illustration of the good. It is at least a natural symbol for that idea. The importance of this will presently appear in the interpretation of what follows the similitude of the sun. One may note in passing that Plato's reconciliation of the fact that the sun is the *ἔκγονος* of the good with his later statement (509 B) that just as the good is superior to *οὐσία* so the sun is not itself *γένεσις* can be learned from the *Timaeus* (41 AB).

I come now to the Divided Line, and I will begin by indicating the points in which it agrees with the doctrine of the *Phaedo*.

Segment (3) stands for the mathematical and kindred sciences, which start *ἐξ ὑποθέσεων* and proceed, not to an *ἀρχή*, but, by agreement (*ὁμολογουμένως*), to a conclusion or end (*τελευτή*). Similarly, in the *Phaedo* a *λόγος* or *εἶδος* is assumed and all results consistent with it are admitted as true. Segment (4) consists in a movement from an *ὑπόθεσις* to an *ἀρχὴ ἀνυπόθετος*, whence the mind returns to the *ὑπόθεσις* with which it started, in this way transforming that 'assumption' or 'presupposition' into a conclusion from a genuine *ἀρχή*. This *ἀρχὴ ἀνυπόθετος*, *i.e.* the *ἰδέα τοῦ ἀγαθοῦ*, is plainly the 'highest' *λόγος* implied in the *Phaedo*, corresponding to *τὸ βέλτιστον*. Further, the scheme of the Divided Line implies, precisely as in the *Phaedo*, that the objects of the mind in (3) are *εἰκόνες* of those in (4). For (3) : (4) = (1) : (2), and (1) represents *εἰκόνες* of the objects of (2).

If we add that (2) consists of animals and 'things that grow

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and are made' (*σώματα*?) and that the mind in (3) uses the objects in (2) to illustrate its *εἴδη*, the above may be taken as a preliminary outline of the doctrine of the Divided Line. Our next step must be to correct and fill up this outline, by comparing it in detail with the text, and with the various interpretations that have been suggested.

We may begin with the easiest segments (1) and (2). It has been maintained, on the one hand (by Mr Jackson, *J. of P.* x. p. 135), that the objects in these segments are purely illustrative of those in (3) and (4): on the other, that they are not illustrative at all, but have a distinct, although an inferior, reality of their own. In the first place one must observe that these interpretations may both be true. For as we saw above the notion of an inferior or dependent or created reality is hardly distinguished in Plato's mind from that of an image or likeness of the superior reality. But as a matter of fact the balance of evidence seems to be in favour of the view that Plato's primary intention was to represent reality by a quadripartite line. There are however several facts that seem to make against this view. The Divided Line is introduced as if it were a completion of *ἡ περὶ τὸν ἥλιον ὁμοιότης*. But perhaps it is intended merely to show wherein the similitude of the sun was deficient and to lead the way to the Cave, which is the true completion of the earlier similitude. Again, the Divided Line explicitly professes to represent a division of things into two kinds, *τὸ νοητὸν* and *τὸ ὁρατόν*. But as a matter of fact segments (1) and (2) are not confined to objects of sight. In 510 E '*πλάττουσι*' suggests touch: in 511 C '*αἰσθητῷ* (not *ὁρατῷ*) *παντάπασιν οὐδενὶ προσχρώμενος*' is applied to the process of thought in (4): and, if we take into account the pages that follow the Cave, 521 C—534, a passage which is plainly a mere expansion of the Divided Line, we find that the concrete counterparts of the abstractions of geometry are called *ὁρατὰ ἢ ἁπτὰ σώματα* (525 D). We know too how sight as the most important of the senses tends to take the place of sense in general. But what seems to me to decide the question is the fact that the sun is not mentioned in the Divided Line, or in the passage 521 C—534. Exclusive reference to sight was hardly essential to the similitude of the sun, for that similitude was extended to include the creative activity of the sun, and plainly a thing is not created quâ visible rather than quâ, let us say, tangible. But the sun *was* essential, and absence of reference to it can mean only that the use of similitude is abandoned.

In the interpretation of segments (3) and (4) we meet the same difficulties as in the *Phaedo*. Mr Jackson's view can be

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gathered from the following (*J. of P.* x. p. 136): "That the superior object is the idea is indicated at 510 BD, 511 B, and is indeed generally acknowledged. What then is the inferior object, 'the image or reflection of the idea'? In the case of every group of particulars to which we give the same name, we assume the separate existence of an idea in which these particulars participate. This idea is the whole completed connotation of the name, as it would be understood by omniscience, hypostasized. Now the general notion is the connotation of the name as we imperfectly understand it, not hypostasized. For example, the idea of sulphur is, hypostasized, the whole sum of the properties, known and unknown, which are common to specimens of sulphur: the general notion of sulphur includes, not hypostasized, so many of these as are known to us. The general notion is therefore not the idea, nor a correct and complete representation of the idea but an incorrect and incomplete representation of it. May we not assume, apart from any indications to be found in Plato's account of the methods of investigation, that by 'the image of the idea' he means the general notion?"

In the first place one would point out that this seems to confine ideas to segment (4) whereas there is reference in the text to ideas in segment (3), *e.g.* in 510 D to *τὸ τετράγωνον αὐτό*. But as Mr Jackson himself admits this (note, p. 136) it will be necessary to examine the chief support of his theory, namely his distinction between *λόγοι* and *εἴδη*. This question might have been raised with respect to the passage in the *Phaedo*, but it is more convenient to discuss it now in connection with the Divided Line.

The sciences that fall in segment (3) are chiefly mathematical (510 C). It is safer therefore to take one of Plato's own examples, *e.g.* a *σχῆμα* or geometrical figure, say a circle, rather than Mr Jackson's example of sulphur, which is certainly not the kind of thing that Plato had in view. In geometry a circle is defined and a number of properties are deduced from the definition. According to Mr Jackson's view the idea of a circle contains more properties than are given in geometry. If by 'properties' are meant deductions from the definition, this is plainly true, but it would be no reason why the *definition* should be regarded as imperfect. If 'properties' means qualities generally, then the implication is that circles have 'properties' which cannot be derived from the definition, that circles are not only x as geometry says but are really xy, where x, y are coordinate qualities common to all circles and such that no x is not y. But is this possible? To make the case more plain one might say that it is equivalent to the supposition

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that a circle can be represented in Cartesian coordinates by an equation different in type from $a(x^2+y^2)+bx+cy+d=0$. The case of sulphur is really similar, although it is less obvious than an example from geometry. For the only possible definition of a specimen of sulphur must be 'That which possesses the qualities x ascribed by us to sulphur.' Any finite number of specimens might have y in common as well as x, but that would give us no right to say that all possible specimens of sulphur are y as well as x, unless y is causally dependent on x. As before, if y is causally dependent on x, the distinction would be, not between what we know and what really is, but between our definition and a complete development of what it implies[1]. Lastly, one would ask what is the precise meaning of 'hypostasize'? An εἶδος corresponds to a definition, *i.e.* a proposition or judgment, and it is hard to see how one could hypostasize a judgment.

Plato's account of the relation of segment (3) to the other segments is obscure and inconsistent. According to the opening words of the passage (*ὥσπερ τοίνυν γραμμὴν δίχα τετμημένην λαβὼν ἄνισα τμήματα, πάλιν τέμνε ἑκάτερον τμῆμα ἀνὰ τὸν αὐτὸν λόγον*, 509 D) the segments (1) (2) (3) (4) ought to be represented by $a\ ar\ ar\ ar^2$, where r is the ratio of a thing to its image. This would make (3) equal to (2) in respect of *σαφήνεια καὶ ἀσάφεια*. But, elsewhere, Plato says that (3) uses as εἰκόνες objects taken from (2) so that $(3)=ar^2$ if $(2)=ar$. And he says also (511 D, cf. 533 D) that *διάνοια* the faculty of (3) is *between* νοῦς the faculty of (4) and *δόξα* the faculty of (2). It is, however, perhaps not necessary to take *ἀνὰ τὸν αὐτὸν λόγον* as meaning strictly 'in the same ratio,' since *ἀναλογία* includes both arithmetical and geometrical progression, and *ἄνισα* suggests the former kind of progression rather than the latter. On the whole it seems safe to say that both the segments (3) and (2) are of an intermediate character. The objects in each are complexes—in (2) material compounds, in (3) combinations of the material and the ideal. (1) and (4) alone are single in character, the latter being what is entirely self-consistent,

[1] A distinction similar to Mr Jackson's is made by some writers on Logic, *e.g.* Mr Keynes (*Formal Logic*, 2nd ed. p. 27) suggests that the name 'comprehension' might be given to "all the attributes possessed in common by all members of the class denoted by the name." Without doubt, if it were necessary to have a word which should mean indiscriminately the primary and the dependent attributes of a term, 'comprehension' would serve the purpose well. But, if I rightly understand Mr Jackson, the distinction between primary and dependent attributes is vital to *his* purpose, for I do not think that Mr Jackson would suggest that the various τελευταί arrived at in geometry are a closer approximation to the εἶδος than the definition from which they are derived.

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the former what is merely inconsistent. A better diagram perhaps for Plato's purpose would have been a line *ABCD* divided into three parts, *BC* serving the double function of being the lower segment of *AC* and the upper segment of *BD*.

With respect to segment (4), it is perhaps worth while to notice that the mental process represented by it is probably suggested by the geometrical method of proof by analysis, the invention of which is ascribed to Plato. In the *Meno* (86 E, 87 A) there is a description of Reduction (*ἀπαγωγή*) which consists in reducing the truth of a proposition (say *y*) or the solution of a problem to the truth of another proposition (say *x*) or the solution of another problem. Here *x* is not known to be true; we know only that *if x* is true then *y* is true. The method of proof by analysis differs from this in two ways: (1) it provides a definite process for passing from *y* to *x*, and (2) *x* is known to be true, *i.e.* the method results in proof (or solution in the case of a problem). The process of passing from *y* to *x* is presumably deduction, that is, *y* is provisionally assumed and deductions are made from it. If one of these deductions, *x*, is known to be true and *if y can be deduced from it*, then *y* is proved. The essential condition of the method is therefore that not only should *x* be derivable from *y* but that also *y* should be derivable from *x*. Reductio ad absurdum consists in the *disproof*, by analysis, of *y*. Here *x*, which is self-contradictory, is derived from *y*, and we can of course, since the consequent is denied, argue back to the falsity of *y*. The first explicit reference to proof by geometrical analysis is, I suppose, in *Nic. Ethics*, 1112 b 15—21: *ἀλλὰ θέμενοι τέλος τι, πῶς καὶ διὰ τίνων ἔσται σκοποῦσιν,...δι' ἑνὸς δ' ἐπιτελουμένου πῶς διὰ τούτου ἔσται κἀκεῖνο διὰ τίνος, ἕως ἂν ἔλθωσιν ἐπὶ τὸ πρῶτον αἴτιον, ὃ ἐν τῇ εὑρέσει ἔσχατόν ἐστιν· ὁ γὰρ βουλευόμενος ἔοικεν ζητεῖν καὶ ἀναλύειν τὸν εἰρημένον τρόπον ὥσπερ διάγραμμα*[1].

[1] In reference to this passage in the *Ethics*, Mr J. A. Stewart (*Notes on the Nic. Ethics*, I. pp. 262—266) speaks of the 'Analytical Method of proof in Geometry' and in explanation of the method quotes from D. Stewart: "If in this deduction I arrive at a consequence which I already know to be true, I conclude with confidence that the principle from which it was deduced is likewise true. But if on the other hand I arrive at a consequence which I know to be false, I conclude that the principle or assumption on which my reasoning has proceeded is false also. Such a demonstration of the truth or falsity is called an Analytical Demonstration." In point of fact no geometer would suppose for a moment that a proposition is proved because true consequences can be drawn from it: to do so would be to admit into geometry probable reasoning (cf. *Ethics*, 1094 b 26). The case of inferring from a given proposition a proposition known to be false is of course entirely different. In geometry, I take it, all proof as such is synthetic. Analysis is not a kind of proof, but only a way of discovering proof.

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Here what takes place in the practical sphere (where y is a τέλος and x is δυνατὸν or δι' ἡμῶν) is explained by the analogy of geometrical analysis. Plato's account of segment (4) seems to correspond with this method point to point. First the ἀρχαὶ of the sciences are provisionally assumed (*τὰς ὑποθέσεις ποιούμενος οὐκ ἀρχάς, ἀλλὰ τῷ ὄντι ὑποθέσεις, οἷον ἐπιβάσεις τε καὶ ὁρμάς,...* 511 B); then the mind proceeds upwards to an ἀρχὴ ἀνυπόθετος: lastly it returns to the place whence it started, that is, to the ἀρχαὶ of the science which have now become the τελευταὶ of dialectic.

Compared with the Divided Line, the similitude of the Cave presents little difficulty. I will first state the most obvious interpretation and then consider objections.

If we call the Cave and its accessories (a), and the similitude of the Sun (b), we find that the passage 514 A—521 B employs a complex symbol $(a)+(b')$, where (b') is practically the same as (b) but differs from it in complexity. (b') is the same as (b) in so far as it is a symbol taken from the facts of light, and a symbol which represents the world of ideas, *i.e.* segments (3) and (4) of the Divided Line; it differs from (b) because it contains more distinctions, among others the distinction between the segments (1) and (2). The symbol (a) is carefully composed so as to suggest a world which is less real than (b'). Instead of the sun, we have in (a) the light of a subterranean fire: instead of the products of art and nature, we have only works of art, among those the merely mimetic products of fine art holding a conspicuous place (*σκεύη τε παντοδαπὰ...καὶ ἀνδριάντας καὶ ἄλλα ζῷα λίθινά τε καὶ ξύλινα καὶ παντοῖα εἰργασμένα*, 515 A): instead of shadows and reflections caused by the sun, we have shadows only, caused by the light of the fire. From these facts only one conclusion seems to be possible. The complex symbol $(a)+(b')$ represents the Divided Line, or, in other language, the Cave completes the similitude of the sun by supplying a symbol for segments (1) and (2). One may add that just as (b') is compounded of (b) and segments (1) and (2), so also what is represented by (a) is not so much the original segments (1) (2) as these segments compounded with (b). The sun must have a place in the sensible world, to correspond to the fire in the Cave, but the fact that what is represented by the Cave is really the sensible world and not the world of sight only is perhaps hinted at in the echoes from the back of the Cave which the prisoners are supposed to hear.

Mr Jackson's view agrees with the view just explained in recognising that the Cave together with segments (1) and (2) form a complex symbol for the whole of reality. But since he regards (1) and (2) as merely illustrative of (3) and (4) and

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seems to think that it is impossible to "treat part of the imagery as part of the interpretation" (p. 140, note) he is led to invent two terms as the interpretation of the Cave, 'particulars as apprehended by the senses,' and 'particulars as they are in themselves.' These new terms are plainly suggested by his view of segments (3) and (4) as representing λόγοι and εἴδη respectively, but, so far as I can see, they have no warrant in the actual text. Mr Jackson takes ἀφομοιοῦντα in 517 A, *ταύτην τοίνυν...τὴν εἰκόνα...προσαπτέον ἅπασαν τοῖς ἔμπροσθεν λεγομένοις, τὴν μὲν δι' ὄψεως φαινομένην ἕδραν τῇ τοῦ δεσμωτηρίου οἰκήσει ἀφομοιοῦντα, τὸ δὲ τοῦ πυρὸς ἐν αὐτῇ φῶς τῇ τοῦ ἡλίου δυνάμει*, to mean 'paralleling' not 'comparing' or 'likening' the ordinary rendering. That is, Mr Jackson, if I understand him, makes ἀφομοιοῦντα refer to correspondence between parts of the symbol, and not to correspondence between symbol and interpretation. Either rendering would suit equally the view which I have explained.

According to Prof. Lewis Campbell, the chief difficulty with respect to the Cave is the interpretation of the *ἀγάλματα σκευαστά*, the shadows of which are thrown on the back of the Cave. Prof. Campbell suggests (*Rep.* II. p. 16) that these *σκευαστὰ* represent "the realities of γένεσις, Nature as the embodiment of the ideas, the facts of human experience as they really happen and not as they seem." Again, more explicitly: "The *ἀγάλματα* are not themselves immediately perceived by sense at all. It is only when the individual mind has been freed by Socratic questioning, and turned about, and asked what is it? (*τί ἐστι;*)...that the soul begins to have an inkling of that world, which was dimly represented to her in crude experience,—of a real finger, of a real square, of the Sun himself as an embodied god, &c....The 'manufactured articles' here exhibited by unseen powers correspond, not to the *εἰκόνες* of the geometers, but to the realities typified by them." Apparently this interpretation of the *ἀγάλματα* leads Prof. Campbell to say that "in passing onwards from the conclusion of Bk. VI. to the allegory of Bk. VII., the ground is insensibly shifted, as the idealizing impulse gathers strength, so that not only the distinction between *πίστις* and *εἰκασία* is dropped (since from the higher point of view the sensible world consists entirely of images), *all* ordinary experience being now merged in *εἰκασία*, but the actual scientific processes which rank with *διάνοια* in Bk. VI. are now degraded to the level of ordinary experience," and to find "some confusion" in Plato's statement that the light of the fire represents the sun, "for the objects seen by the denizens of the Cave are not lights but shadows." It is easy to see that Prof. Campbell's interpretation of the

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ἀγάλματα depends on the assumption that the prisoner in the Cave who sees only shadows corresponds to the ordinary uneducated man. But is there sufficient ground for this assumption? The conclusion to which it leads seems improbable, for it is unlikely that a change of doctrine should be introduced in an allegory, since the primary purpose of an allegory is merely to illustrate. And this consideration seems to have special force in the case of the Cave, since the passage which immediately follows it is not symbolic and nevertheless repeats in explicit terms the distinction made in Bk. VI. between *εἰκασία* and *πίστις* (534 A).

Strictly there are two stages in the education of the prisoner in the Cave, (1) when he is freed from his fetters and allowed to see the *ἀγάλματα* and the fire, and (2) when he is 'reluctantly dragged up a steep and rugged ascent' and enabled to see the sunlit world and ultimately the sun. Since the light of the fire is to correspond to the sun the inevitable inference is that the ordinary uneducated man corresponds to the prisoner after he has been freed so as to be able to see the *ἀγάλματα* and the fire. The prisoners who see only shadows are 'like us' but represent a more extreme case of the same defect—the defect of knowing only a part of reality and taking it to be the whole. Thus the Cave contains two symbols for ordinary experience. One only of these is to be interpreted strictly: the other is introduced for the sake of greater emphasis. As to the *ἀγάλματα*, our conclusion must be that they correspond to the objects of segment (2) of the Divided Line and therefore to the *εἰκόνες*, and not to the *εἴδη*, of geometry.

The pages 521—534 E which follow the Cave practically repeat, from a new point of view, the doctrine of the Divided Line. They contain, however, two points which call for special attention.

The first is the account (521 C, *seq.*) of the way in which the mind is led from segment (2) to (3). Some things in the former are *ἐγερτικὰ τῆς νοήσεως* while others are not. For instance a finger does not incite to reflection, or in other words is adequately, that is, consistently, apprehended by *αἴσθησις* and has no *εἶδος* corresponding to it. On the other hand, the perception of greatness and smallness, thickness and thinness, hardness and softness, tends to contradict itself and requires therefore for its correction the services of a higher faculty.

The second point worthy of notice in the account of the education of the guardians is a reference to arithmetic 525 DE: *οἶσθα γάρ που τοὺς περὶ ταῦτα δεινοὺς ὡς, ἐάν τις αὐτὸ τὸ ἓν ἐπιχειρῇ τῷ λόγῳ τέμνειν, καταγελῶσί τε καὶ οὐκ ἀποδέ-*

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χονται, ἀλλ' ἐὰν σὺ κερματίζῃς αὐτό, ἐκεῖνοι πολλαπλασιοῦσιν, εὐλαβούμενοι μὴ πότε φανῇ τὸ ἓν μὴ ἓν ἀλλὰ πολλὰ μόρια. The precise meaning of this is obscure. It must mean (1) that units cannot be unequal: but it may also mean (2) that a unit is to be regarded as indivisible. The latter meaning would exclude from arithmetic fractions and ratios in general.

Although the references at the beginning of Bk. X. to the Theory of Ideas are obviously, as Prof. Campbell points out, merely illustrative, perhaps I may with advantage devote a few words to them. The productions of fine art are classed with the reflections of segment (1) of the Divided Line. Each is a copy of an object in segment (2), for example, a bed. That object in turn is a copy of an *ἰδέα* which exists *ἐν τῇ φύσει* and is made by God. Again, three kinds of knowledge are distinguished: (1) that of the *μιμητής*, (2) that of the maker of the *σκεῦος*, *ὀρθὴ πίστις*, and (3) that of the man who uses the *σκεῦος*, *ἐπιστήμη*. Thus distinctions (*ἰδέα* and *ἐπιστήμη*), which in Bks. VI. and VII. fall outside segments (1) and (2), are made to fall inside these segments in Bk. X. The explanation of the discrepancy must be that Plato has here modified his real theory for the temporary purpose of depreciating fine art. The same explanation will hold of 596 A *εἶδος γάρ που τι ἓν ἕκαστον εἰώθαμεν τίθεσθαι περὶ ἕκαστα τὰ πολλά, οἷς ταὐτὸν ὄνομα ἐπιφέρομεν.* In Plato's normal theory this proposition is not true, as is shown by the example of a finger in Bk. VII.

We have now before us an outline of Plato's Theory of Ideas, in so far as it is expressed in the most important passage of the earlier dialogues. I do not propose to draw from this outline any formal inferences with respect to the general character of the Theory of Ideas. Such inferences could be made with safety only after a study of the later dialogues. But it may be worth while to bring together some points, which seem to have come to the surface, as it were, in the preceding discussion.

1. An idea is the metaphysical equivalent of a definition. To us Definition is only a part of logical doctrine, to Plato it is a formula for all scientific thinking. Since a definition is the explanation of the *connotation* of a name, we may perhaps say that the Theory of Ideas of the earlier period tends to overrate the importance of the meaning of a term in connotation, as opposed to its meaning in denotation.

2. The relation between an *εἶδος* and the individuals that have the same name is expressed indiscriminately by two groups of words: (*a*) *παρεῖναι, μετέχειν, κοινωνία* &c., and (*b*) words

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which imply that an individual is *like* its εἶδος. Besides the passages referred to above, *Phaedo* 73 E *seq.* may be mentioned as containing an important statement of the latter way of expressing the relation. The εἶδος is there represented as a kind of type or ideal at which the particulars aim (ὀρέγεται) unsuccessfully.

3. There is no attempt to explain the nature of the individual or particular as such. The peculiarity of each of τὰ πολλὰ is that it can 'share' in contrary εἴδη. But since such εἴδη have no κοινωνία, it inevitably follows that the particular breaks up into two parts which have no connection with each other. Or again, in terms of 'likeness,' we should ask in what the particular *differs* from the εἶδος? And Plato has no answer.

4. The position of mathematics is hopelessly ambiguous. It is said to use sensible εἰκόνες. But are these *necessary*? Plato seems to imply that they are not. Again, is there not a defect in his mathematical conceptions? He seems to insist on an abstract and absolute unit, which is indivisible, and therefore to exclude incommensurable quantities, and to limit arithmetic to the direct operation of multiplication.

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III.—SENSE, MEANING AND INTERPRETATION. (II.)

By V. Welby.

Turning now from Logic to Psychology, the first question which suggests itself is whether Interpretation,—its genesis, its processes, and its developments,—has hitherto received the same attention from psychologists which they so conscientiously bestow on all other mental processes. That it is a mental process no one would deny: and as such by universal agreement it falls within the scope of psychological inquiry. If it prove on examination that such attention has not hitherto been given, we may further ask if there is a good reason for this omission, and whether such reason has been duly explained to the reader.

Let us see then what Psychology has to teach us about Interpretation. Where does it begin in the ascending scale of life? How does it do its work? What are the stages of its advance? How is it related on the one hand to Attention, Perception, Memory, Imitation, Judgment, Inference, Conception, and on the other to the physiological phenomena of response to excitation? Again, to what does the process properly apply? How far is the term metaphorical and therefore only partially applicable? What is it that needs, or bears, or demands interpretation? Is it primarily simple sensation, rising to that highly complex experience, the hearing of articulately 'significant' speech? Or is it from the first the 'meaning' of this sensation —the 'meaning' of the first touch which to the Protozoon was the signal of 'food' or 'danger,' to the 'meaning' of the most abstract of propositions? Or should we rather here say, 'sense'? Does the living organism from its lowest beginnings in some 'sense' 'interpret' sense? And does this 'interpretation' gradually become more conscious and more complex until the 'senses' of temperature, of resistance, or effort, of touch, of sight, of smell and taste, of hearing, resolve themselves into the intellectual 'sense' in which all experience, but especially all language, is to be interpreted?

We are told much of the impulse to imitate or mimic, but

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rarely or never of the equally deep and primordial impulse to 'sensify'—to touch with 'meaning'—every stimulus, excitation, imitation, impression, sensation, perception, idea, till we reach conception, which may be identical with the 'result of interpretation,' and is often identified with 'meaning.' If 'idea' is here left out it is only because our neglect of the 'sensifying' process helps to render it one of the most ambiguous of terms, as in the case both of 'experience' and 'reality.' Certainly the impulse to 'sensify,' which makes the import of every unit of consciousness or experience the measure of its importance, which makes it 'signify' just as much as it 'signifies,' needs quite as much analysis and is as much a part of true scientific training, as the impulse to discriminate or to compare. The habit of 'attaching' meanings is as dangerous as the habit of seeking or assuming analogies, and as useful as that of detecting minute but important differences.

Dealing with the primary intellectual functions Prof. Sully[1] gives us "(*a*) the initial stage, viz. the presentation of an object to sense, and the fixing the attention on this, and (*b*) the stage of Intellection proper, the act of perceiving, interpreting or recognising what is presented" (p. 61). Here we have Interpretation, with Signification, its condition and implication, incidentally coupled with Perception and Recognition. No further notice is taken of or use made of it: it is given no status whatever: we are left without any guidance as to the nature or function of Interpretation as distinct from the Perception which precedes, accompanies, or at least conditions it, and the Recognition which links past with present experience. Here then I would venture to suggest that significance and interpretation should receive in future more definite 'recognition,' and that we need the triad,—Presentation, Attention, Interpretation. Attention, we learn, "underlies and helps to determine the whole process of mental elaboration" (p. 167) and is a fundamental process, appearing as a reflex at the very beginning of mental development; the whole movement of which is determined by the co-operation of this factor. According to the law of attention that we pass at once from the sign to the 'thing signified,' we have acquired an invincible habit of passing instantly from the muscular sensations of the eye to the representations which they call up. That is, of *interpreting* sensation. The child learns to interpret as he learns to attend and to infer. Why is this supremely important mental activity—the immediate result of attention—the only one left unanalysed? And what do we suppose to be the genesis of 'sign'? What is the first

[1] *The Human Mind*, Vol. I.

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moment when a sensation or a thing stands not for itself but for something else, draws attention not to itself but beyond itself? We shall of course be referred to memory. But with loss of memory is the idea of meaning obliterated or the 'sensifying' function atrophied? Or may not this remain as an unsatisfied craving, an unanswered 'What does it all mean'? How far is the doubling tendency to see everywhere thing plus meaning, or sign plus significate, ineradicable because primordial? Where does the 'calling up' process begin? When one sensation suggests another 'remembered' one? Is that the link between association and signification?

Prof. James[1] considers that the great difference between man and brute is that the former "has a deliberate intention to apply a sign to everything" (p. 356). "How, then, does the general purpose arise? It arises as soon as the notion of a *sign as such*, apart from any particular import, is born; and this notion is born by dissociation from the outstanding portions of a number of concrete cases of signification" (p. 357).

At least here we have what I would call the sensifying instinct raised to the highest importance and marking the advent of humanity. But what is here meant is the fully conscious, volitional, 'intentional,' reflective application of the sign: and in this sense we may welcome the definition of man as the sign-*generator*—rather than merely the sign-*maker*.

Prof. Baldwin[2] considers that "the ultimate basis of psychological interpretation and construction is the mental experience of the individual, in so far as it has universal meaning" (p. 19). "... It is only after the words assume meaning and sense to us," like all sensations or sense-impressions, "that they become permanent acquisitions" (p. 202). He teaches that "the final constructive product is a true mental unity or picture, which has its own significance for the mind, apart from its elements. This significance is an ideal meaning, which possesses general interest, and appeals to man universally" (p. 234).

Here we get an incidental definition of significance as 'ideal meaning,' which would surely be more instructive if we had begun with a section on, let us say, the nature of the relation between real and ideal 'meaning,' and the function of interpretation as applied in each case and with express reference to the idea of 'sense[3].' Further "the most important thing about interest is its quality as stimulating the will. A thing is

[1] *Principles of Psychology*, Vol. II.

[2] *Handbook of Psychology*, Vol. I.

[3] Prof. Dewey's Article on "Knowledge as Idealisation" (*Mind*, Vol. XII. No. 47) calls attention strikingly and usefully to some of the questions here raised or implied.

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interesting to me when, for any reason, it appeals to my attention—when it is worth looking at—when it is so related to me that I am led to investigate it; and the feeling of interest is this need of looking, investigating, finding out about" (p. 139). "In interests, therefore, we have a step in mental growth of enormous significance in psychological theory" (pp. 148—9)[1].

In 'interests' have we not in fact the key to the nature of 'sensifying' process? The 'feeling of interest' endows our surroundings with,—bestows upon them, attributes or ascribes to them,—somewhat which may be described as meaning or sense or significance: in other words makes them significant, suggestive, indicative, symbolical, and then prompts the function of interpretation. What is it that affects me? Where does it come from? What is it like? What will come of it? How shall I act upon it? are among the interpretative questions. It may be said that this subject is already discussed in logic and psychology under the heads of Attention, Perception, Memory, Judgment, &c. No doubt: but not from the point of view taken here. Sense *in the meaning sense* has never yet been taken as a centre to work out from: attention, perception, memory, judgment, &c. &c. have never been cross-examined from the direction of their common relation to a 'meaning' which has to be made out, a 'sense' which has to be mastered, a 'significance' which has to be felt, understood and acted upon. Before we ask, what is real? we not only need to ask the 'meaning' of the 'sense of reality' but the 'meaning' of the sense of 'sense'; the sense, intent, import, purport, of the perceptions which make up or bring us experience.

Prof. Ladd's works would supply materials for an independent Essay, and it is difficult to choose only one or two representative passages from his *Psychology*. But it may be noted that hardly any notice is taken of, or stress laid upon, this central factor of intelligence,—the reading of the messages of Sense, and of the *sense* of these messages from the stimuli by which perception is excited. Considering the enormous mass of careful detail which the book contains, surely a larger space might have been devoted to analysing not only the unifying grasp but the sensificatory and translative energy of the "interpretative consciousness."

But the inquiry suggested seems to be endless, since the domain of 'meaning' covers all that can be discussed to any purpose, or indeed in any rational sense. I must be content therefore with having roughly indicated some of the many directions in which enhanced clearness of thought might be the

[1] Baldwin, *Feeling and Will.*

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reward of a hitherto neglected investigation, and pass on to deal with (2) the objection that the study for which I am pleading would be impossible, and even if not impossible would be undesirable, as tending to foster pedantry and shackle thought. But the very idea of its impossibility seems largely owing to its non-existence. From the moment when we begin to make everything else subordinate to that vital interest for which we have only as yet the vague and unanalysed expression which belongs to vague and unanalysed thought, its importance begins to reveal itself, to stand out and to demand a more worthy appreciation than has yet been vouchsafed to it. In any inquiry we may be forced at some point to recognise that what we have taken for an 'object,'—even in the widest sense—is rather a 'meaning' or a 'sense': and that the halo of reality or objective existence which we have thrown round it is just part of its essential prerogative: is just part, that is, of the quality of 'sense' which is the one character to be always safely ascribed to it.

Why are we tempted to suppose that it would be impossible to study the subject of meaning without re-opening all the traditional controversies of philosophy, merely to plunge us into an ocean of baffling problems of thought without hope of rescue? Surely because a vital point has been missed in our training—in the very theory of training! We have not had the sensifying and interpretative functions developed: their nature has not been explained to us nor their true importance pointed out[1].

Again, why do we imagine that such a study could only end

[1] It is a curious—and may we say a significant?—fact in this connection that the only instance I have been able to find of any direct attempt to consider exactly what we mean by 'meaning' occurs in a forgotten book of somewhat quaint dialogues called *The Philosophy of Things*. *A* expresses surprise that *B* has never once asked him what he means by the word *meaning*.

A. "We have been talking almost of nothing else but the meaning of words, and of the uncertainty of the meanings which are annexed to them, and yet you have never once asked me the meaning of this same most important word *meaning*!—the very pivot on which the whole of my argument turns—the very hinge on which it hangs!"

B. "But by the word *meaning* you intend the *sense* in which a word is to be understood."

A. "Ay—there it is. I ask you to give me gold for my paper, and you only give me another piece of paper. I ask you to give me a thing for my word, and you only give me another word."

* * * * * * *

B. "What then do you mean by the word *meaning*?"

A. "Be patient. You can only learn the meaning of the word *meaning* from the consideration of the *nature of ideas*, and their connexion with *things*" (pp. 78—9).

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in rigid pedantry and the sacrifice even of such power of adaptation as language has already attained? Surely, once more, because of that unfortunate hiatus in our training already so much insisted on: and notably also from our failure to appeal to that organic analogy for language which is admittedly the best we have. When the force of this analogy is once realised it becomes amazing that we should suppose it possible to ignore the need for new phrases and words, and insist on the established vocabulary and forms sufficing us for the expression of new experiences. In other words it betrays a curious atrophy, in this one direction, of the adaptive power which has attained such advanced developments, and has so enormously modified and enlarged the outlook of life in the form of mechanical invention, whether for commercial or for scientific purposes, or merely for the furtherance of comfort and convenience. This tremendous supplementary outgrowth, this unexampled expansion of the range of sense and muscle, ought surely to rebuke the strange hopelessness, apathy and contented bondage to the outgrown and the outworn which keeps the development of adaptive *expression* so far behind that of invention and discovery and thus behind experience: which deprives us of whole quarries of fresh simile whereby to express fresh lines of philosophical thought: and which acts, so far as it goes, as an effectual barrier to the acquirement of a more profound and really scientific Psychology, and a Logic which shall command acceptance without question or reserve.

If it be rejoined that the growing powers of language are in fact recognised, used, stimulated and systematised by every means in our power and especially through every form of training, I would answer that as yet the only work even recognising them which I have been able to find is Dr Jespersen's. His title *Progress in Language* at least strikes the needed and missing note: and whether his special theories are or are not accepted, we owe him gratitude for boldly saying that language is advancing and must rise in scale and value and power, that we have even to learn that grammar must be servant and not master, and that whatever expresses best and signifies most should be systematically adopted, absorbed, and if need be, allowed to transform and amplify the current canons of expression.

After all, language is 'made for man' and not man for language: he ought not to be its slave. If it be objected that linguistic advance cannot be deliberately organised or even cultivated because it refuses to be controlled, and that it is hopeless to attempt to secure universal consent even to the most obviously needed changes, the answer is that we already

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assiduously cultivate correct articulation, true intonation and pronunciation, accurate spelling, punctuation and grammatical construction, and obtain in each case substantially uniform usage. Why then not direct the attention of the young from the very first to what is yet more important, the need of fresh developments in expression and their right direction and control? Might we not further urge upon those who are our natural leaders and teachers in speech and writing the pressing duty of asserting the power of Man to train within obvious limits his function of linguistic expression as he already trains his touch and his vision,—and indeed his memory and his intellect? J. S. Mill[1] reminds us that mathematical study induces wariness: it has the great advantage of training the mind to make sure of its steps: "at least it does not suffer us to let in, at any of the joints in the reasoning, any assumption which we have not previously faced in the shape of an axiom, postulate, or definition" (p. 612).

And this is surely one benefit that we should reap by making significance and interpretation the subject of elementary study. It would form the best introduction to mathematics, and even act in this respect as its substitute in those cases where there was no mathematical aptitude in the student.

At present we have not even attained to an adequate conception of what an ideal language should be: we think of it, if at all, as the impossible thing that Bishop Wilkins proposed —a formalised dialect of culture with its phrases "rendered according to the genuine and natural importance of words," as if this were anything but what their speakers intended by them! Or we try to invent an artificial 'Volapük.' It is surely time that the fetish of a possible Plain Meaning, the same at all times and places and to all, were thoroughly exposed, and students more explicitly warned against anything approaching it, except on the narrowest basis of technical notation. Even Dr Jespersen tells us that an ideal language would "always express the same thing by the same, and similar things by similar means; any irregularity and ambiguity would be banished; sound and sense would be in perfect harmony; any number of delicate shades of meaning could be expressed with equal ease: poetry and prose, beauty and truth, thinking and feeling would be equally provided for: the human spirit would have found a garment combining freedom and gracefulness, fitting it closely and yet allowing full play to any movement" (p. 365).

But the organic analogy forbids the metaphor 'garment,'

[1] *An Examination of Sir W. Hamilton's Philosophy.*

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since it sacrifices an essential truth. Thought is not merely 'clothed' in language. And the whole passage seems to ignore too much the modifying effect of circumstance and 'atmosphere' on 'meaning,' and the need for the ideal interpreter, keenly sensitive to delicate differences of sense, to whatever cause these were due: besides which the writer seems to forget that in order to have a really higher grade of significance, we must train a new generation in 'sensifics.' Indeed we even require to evolve skilled 'sensificians' able to disengage the most subtle over-tones of sense from the complex note of expression. There is a great deal of sound in the meaning-world, but not enough delicacy of discrimination. The sound is not fully articulate to us: we are more or less meaning-deaf. In a wider than technical sense 'asymbolia' is more generally present than we suspect. Yet if an ideal language and its ideal interpreter cannot yet at all events be hoped for or practically aimed at, it would be something to realise, as Mr Balfour claims that the philosopher has done, what *not* to do.

"It is something to discover the causes of failure, even though we do not attain any positive knowledge of the conditions of success. It is an even more substantial gain to have done something towards disengaging the questions which require to be dealt with, and towards creating and perfecting the terminology without which they can scarcely be adequately stated, much less satisfactorily answered" (p. 160)[1].

I would adopt this very language with reference to expression, its defects, its possibilities, its prospects of development. It would be something to discover the causes of our failure to express our whole or exact—what? It would be more to discover whether it was idea, conception, fact, meaning or thing which we oftenest failed to express.

Mr Romanes[2], following out an analogy between the evolution of language and that from the single- to the many-celled organism, remarks that "as in the one case there is life, in the other there is meaning; but the meaning, like the life, is vague and unevolved: the sentence is an organism without organs, and is generalised only in the sense that it is protoplasmic" (p. 314).

The comparison of meaning to life suggests two questions: (1) whether our inquiry is after all merely a question of Definition, and (2) whether a conception like Meaning can be defined at all. But the very fact of any doubt as to the possibility of defining terms which stand for unique or ultimate (primary) ideas or any significant or *sense-ful* words at all, at once reduces the appeal to definition to a secondary place

[1] *The Foundations of Belief.*
[2] *Mental Evolution in Man.*

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among possible solutions of our problem. There is perhaps no greater snare, when we begin to realise the chaos in which word-sense lies and to seek a remedy, than the easy and obvious one of definition. Define, define, we cry, and then all will be easy.

But surely we forget that in the first place, this is often precisely the most impossible thing to do; as a fixed meaning, the same for all, unaffected by context of any kind, applies only, if at all, to a small proportion of ordinary words: and secondly, that to define every word which needs it would at once render all important works simply unreadable. They would be so cumbered with definitions or with pleas for, and justifications of, proposed definitions, or with protests against certain received definitions, that the book itself would disappear, while the definitions would provoke challenge on every side, and except in a few cases gain no universal assent, and thus advance us no further. Definition, though essential on its own ground (which again may be variously defined) would tend, if exalted into a panacea, to hinder the evolution of the most precious quality of language,—that power of growth and adaptation by which even now it reflects changes in the psychological atmosphere, and utilises these to purify and enrich the treasures of thought and imagination. But even if this were not so, the main problems not merely of sense but of significance—in short of 'sensifics,'—must have been solved before we could arrive at really authoritative definitions. Meanwhile the search for these must always itself have valuable uses. As Prof. H. Sidgwick says, there is often more profit in seeking than in finding definitions.

Prof. Minto[1] tells us that "words have little meaning for us; are mere vehicles of thin preconceptions, raw prejudices" (p. 88). The remedy, he thinks, is the verification of meaning. We must fix and readjust. Surely that is beginning at the wrong end? We want first to rouse a general 'sense' of what the *value* of language, whether in the direct 'sense' or as applied to all that 'speaks' to us,—Nature, Art, &c.—may become to us if we will: of how much it may convey and suggest to us if we only master its 'meaning' methods. The varying character of language of which we so complain, the changing complexities of its suggestiveness and its implicative flexibilities, are not in themselves evils: even its 'ambiguity' is in a certain sense a glory which it shares with all the higher organisms: at this moment the very richness of this living suggestiveness is the cause of strenuous biological discussion and even controversy on a central principle.

[1] *Logic: Induction and Deduction.*

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Organic development tends in proportion to its complexity to suggest more than one inference, and in that case to have more than one possible meaning for the observer. And thought cannot be poorer than life, so that its expression must needs be capable of more than one interpretation. Only let us recognise this and act upon it, and we shall cease to crave or strive for the fatal gift of final and mechanical precision of outline, or to protest againt the kind of 'vagueness' which belongs both to life and to the horizons of the world in which we know it. We shall rather seek to be less 'vague' in another sense: to know more clearly how things really are in this matter: to allow more intelligibly for the halos or penumbras and for the atmospheric refractions which surround the symbols of living thought and actively growing mind. Ours is not a dead world without atmosphere in which all outline is clear cut and hard: earth's outlines melt and vary, shift and disappear, are magnified, contracted, veiled, by a thousand changing conditions. So with the 'world' of experience and its expression. We are too apt to over-estimate the value of mere precision in language and even in thought; though for some purposes, as *e.g.* diplomacy, it may be very great. As Renan himself, that master of lucidity, says:

"The clearness and tact exacted by the French, which I am bound to confess compel one to say only part of what one thinks, and are damaging to depth of thought, seemed to me a tyranny. The French only care to express what is clear, whereas it happens that the most important processes, those that relate to transformations of life, are not clear; one only perceives them in a kind of half light."

This is suggestive witness. And when Mr Balfour[1] urges upon us the power of authority to produce "psychological 'atmospheres' or 'climates' favourable to the life of certain modes of belief, unfavourable, and even fatal, to the life of others" (p. 206): when he says that their range and the intensity and quality of their influence may vary infinitely, but that "their importance to the conduct of life, social and individual, cannot easily be overstated," he would do well, surely, to add a warning of their effect, not only upon Belief but upon the Meaning whether of conduct or of experience, or of the verbal expression and definition of either. For these 'climates' must powerfully affect and modify the 'significance' both of life and expression in act or word; while we are constantly tempted to ignore the fact at least in language, and to suppose that meaning is the same to all,—or ought to be so. It is well to be warned that "identity of statement does *not*

[1] *The Foundations of Belief.*

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involve identity of belief" (p. 263); and that we are *not* entitled to assume "that when persons make the same assertions in good faith they mean the same thing." There is no precise or definite relation between language and belief; but Formal Logic and conventional usage, he complains, both assume the opposite, a constant relation between Symbol and 'thing symbolised'—that is, Symbolate. This is in fact "an artificial simplication of the facts" (p. 265).

"If in the sweat of our brow we can secure that inevitable differences of meaning do not vitiate the particular argument in hand, we have done all that logic requires, and all that lies in us to accomplish. Not only would more be impossible, but more would most certainly be undesirable. Incessant variation in the uses to which we put the same expression is absolutely necessary if the complexity of the Universe is, even in the most imperfect fashion, to find a response in thought. If terms were counters, each purporting always to represent the whole of one unalterable aspect of reality, language would become, not the servant of thought, nor even its ally, but its tyrant. The wealth of our ideas would be limited by the poverty of our vocabulary. Science could not flourish nor Literature exist. All play of mind, all variety, all development, would perish; and mankind would spend its energies, not in using words, but in endeavouring to define them" (pp. 266—7).

Truer words were never written. Yet if we say that when we have managed to secure the validity of a particular argument we have done all that can ever lie in us to accomplish, and that more would always be not only impossible but undesirable, surely this depends on what such 'more' was. Incessant variation, as we have seen, is indeed as vitally necessary in the world of expression as in the world of life. Here there is no question even of metaphor. But that variation may become infinitely more under control than it has ever been yet. To speak of our struggle with ambiguity under the metaphor "in the sweat of our brow" recalls the husbandry of the savage in contrast with the scientific developments of civilised agriculture. Truly the muscular effort and its result, and even the primitive spade and hoe and so on, survive but little changed. Yet how small a part they now play by comparison with the manual labour and the tools of the earliest days! Still greater of course is the difference in our weapons and in our means of transport. When we have sharpened the arrow or the hatchet and trained a service of human runners or even of swift animals, we have done all that is possible on that plane of development: but most assuredly we have not even begun, except so far as one phase insensibly succeeds another, the next stage in the long ascent of civilisation. By what right do we assume that Language is the one petrified, ossified, non-evolving function of humanity, doomed eternally to remain either clumsy and

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rude, misleading, confusing, incongruous, inconsistent, or else narrowed and crushed into a mere mechanical notation like that of arithmetic? As well say that we must for ever be condemned in the matter of musical instruments to the alternative of a primitive bagpipe or horn and an elaborate barrel-organ. And if it be (rightly) objected that Language needs an organic rather than a mechanical analogy, let us remember the difference between the dexter finger of man and its humbler simian ancestors, or even between his eye and its primitive prototype in the mollusc.

"We are no more able to believe what other people believe than to feel what other people feel." We may put the word 'mean' here for the word believe: and that, even in the case of "friends attuned, so far as may be, to the same emotional key." The student of 'sensifics' at least may be grateful for Mr Balfour's plain statement that "this uniformity of conviction, which so many have striven to obtain for themselves, and to impose upon their fellows, is an unsubstantial phantasm, born of a confusion between language and the thought which language so imperfectly expresses. In this world, at least, we are doomed to differ even in the cases where we most agree" (p. 276).

At all events, if such 'uniformity of conviction' were ever attained it would mean the 'death' of all that makes conviction valuable. There are assuredly "differences where we most agree" and also "agreements where we most differ." Yet there is no doom in the matter except that which we pronounce upon ourselves. If for 'uniformity' we substitute intelligent sympathy and a consensus which has learned to understand its own conditions: if instead of a clumsy makeshift or a rigidly fixed and invariable mechanical action, we start from the idea of a delicately flexible organic adjustment, then our 'doom' turns into our hope and will issue in our rich reward.

We are not tied down to the action of Natural Selection only, for voluntary action tells here also: and the 'characters' that language acquires may certainly be 'transmitted' and to some extent deliberately bequeathed. Only first let us learn more about sense as the paramount value of Language, and thus about the true conditions of its growing significance. If the meaning—here equivalent to content—of such propositions as 'Cæsar is dead,' 'Stealing is wrong,' or 'God exists' could be exhausted by one generation, they would be false for the next. It is because they can be charged with a richer and richer content as our knowledge slowly grows to a fuller harmony with the Infinite Reality, that they may be counted

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among the most precious of our inalienable possessions" (p. 278).

And why should not Language itself be charged with a richer and richer content as we realise more clearly what it may do for us? After giving us a typical example of "all that is most lucid and most certain" (p. 281), we are warned that its purport "is clear only till it is examined, is certain only till it is questioned." It serves us for working purposes, but that is all. Yet even so its credentials are better than any 'Foundations' could be, as they vindicate themselves by results. The working test is pre-eminently that which applies to language.

When we see the beginnings of an appreciable diminution of mutual misunderstanding and controversy, together with a still greater increase of power to express and power to distinguish, to discriminate, to combine, to co-ordinate the wealth of experience: when we begin to acquire methods of interpretation enabling our "most lucid and most certain" judgments to bear the closest examination and question and to become the clearer for the process, we shall not need to trouble about the 'foundations' of what will thus more than vindicate itself. It will be enough to have diminished the present enormous and grievous waste of expression-power and to have raised language at least to the level of the nervous system to which it belongs, in its power of adaptive response to excitation.

Once let general attention be directed to the practical mischief—the waste and loss, the muddle and misery—caused or fostered by inherited habits of language, and the universal demand for economy of means and a 'way out' of deadlocks will come into play and soon make remedy possible. Indeed in these days of 'enterprising journalism' the danger may soon become one of going too far and too fast. But we are a long way from this yet. Most of us are content to remain on what might be called a non-volitional level of speech, checking rather than fostering the adaptive power which has given us all that makes language worth having—its beauty and fitness as well as its symbolical character. As it is, the growth-force is supinely allowed to spend itself in sporadic and simply wayward outbursts, mere play for the relief of superfluous organic energy and impulse: there is no deliberate or recognised system of directing these to intellectually useful ends. We practically assume that language must be as far as possible stereotyped, and that the only exceptions or alternatives are the casual innovations dictated to us by the man in the street, who has never been told that 'meaning' is of the smallest consequence, and airily destroys even for scholars valuable distinctions and associations while his supposed teachers look helplessly on, as

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in the case, *e.g.* of 'phenomenal.' Though even here, changes apparently erratic and made purely at random may have a distinct psychological value and better reasons than we or their maker quite realise.

And if we sorely need a heightened sensibility to the possibilities and dangers of significance (with all its implications) we equally need it in the case of analogy. This however is a subject so large as well as so important from the point of view of this Paper that even to sketch it would demand a whole essay. The study of analogy, metaphor, simile and illustration from the point of view now suggested, is of vital importance not only for Logic and Psychology but also for Science and Philosophy. So indeed is the whole question of language as raised by 'sensifics'; but this again for want of space cannot now be discussed.

Both scientific men and philosophers complain more loudly every day (as I have a mass of evidence to show) of the extent to which they suffer from the present chaotic state of things. The truth is that just as we are trained to be familiar with 'foreign' languages, so we ought to be trained to be familiar with new dialects in expression, whether these were direct as in terminology, or indirect as in graphic or other aids to representation. And let us not object that this would be an enormous additional tax on memories already overburdened. The truth is that we need far greater skill in swiftly discerning the complexities of sense: in the art of seizing at a glance the point, the gist, the whole trend of whatever is said or written, to put it in a nut-shell if we choose: that we ought to be able to 'place' it, to translate it, to 'enter into' it, to assimilate it—that is, to transform it into living tissue of our own. And we ought besides to be imbued, to be saturated with the 'sense' of the moral obliquity of giving each other darkness when we might be giving light.

If we admit with Dr Ward[1] that "philosophy has no nomenclature and no terminology," that "every giant and every pigmy states and misstates and restates as much as he wills"; that "even babes and sucklings rush abroad brandishing the Infinite and the Absolute with infinite ignorance and absolute conceit," we can hardly deny the moral as well as the intellectual obligation to do our utmost in any way that seems feasible to end such a disastrous anomaly. The labour of fresh inquiry could not fail to be amply repaid. The results of this would be much more than literary. On the one hand it is a question of increased clearness and freedom in treating difficult or

[1] *Mind*, Vol. xv. No. 58, p. 226.

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obscure subjects, increased power of propounding, and also of adequately criticising, new philosophical ideas: on the other many a fallacy or myth owes its survival in great measure to a dim general suspicion that the real gist of it has not been touched by adverse criticism. Popularise 'sensifics' and the faddists would have a hard time of it; unless indeed their 'fad' only required re-stating, limiting, guarding, in order to contribute some useful item of additional knowledge or some illuminative principle of thought. If more precise definition of the methods by which we might hope for a really new mental start is demanded, it must be answered that to attempt a premature formulation of these would be to court defeat; would in fact be fatal. Such an explanation or such a programme must be the outcome, not the preliminary, of the inquiry hoped for. First let us arouse a really active interest in the subject among those who are intellectually in touch with the rising generation and who are the virtual if sometimes the unrecognised leaders in all questions of thought. Then let us definitely examine the feasibility of an education avowedly starting from and centering round the principle of 'significs' or 'sensifics.'

If we are again tempted to object that this is too abstruse a subject for any but advanced students, we must remember that using the words in the wide sense which here alone applies and is called for, the first mental lesson which nature teaches the infant is precisely this. She surrounds him with stimuli and excitations: she prompts him to interpret these as best he may, and even to revise his translations under the pressure of pain and discomfort. And she leaves him no peace till he has learnt himself also to be significant, to 'convey meaning' and suggest 'sense' as unmistakeably as possible, first by cries and gestures, then by imitative articulate speech. We have only to take up her curriculum and carry it on, as in fact we do in the case of reading, writing, arithmetic, &c. If only by the impulse and habit of imitation, consensus in language is soon assured to the early stages of the growing intelligence, and consensus is the one means by which we may hope to secure it on the highest intellectual plane. Communication is now so easy among the intellectual leaders of men that there ought to be no difficulty in obtaining it when its enormous advantages are realised. We have already specific studies of acknowledged value under names like Hermeneutics, Orthology, and Exegesis. Moreover, although philologists complain that Sematology "the science of meanings," and Semantics (Bréal, *sémantique*), "the science of change of meanings" have hardly yet been touched, the importance of these and of the psychological side of language

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generally is rapidly coming into greater prominence. And as foreign scholars themselves admit the special fitness of our language for studies of this kind, may we not hope that before long a start may be made by English writers and teachers in the direction of a more definite and combined effort than has yet been made, to promote the development of the expressive and discriminative powers of language, and to give the study of its main value, 'sense' or 'meaning' a more prominent place in mental training?

Psychology itself has hardly begun to take or to define explicitly its true place in schemes of general training. But it is gradually, however obscurely, making itself felt as a really potent factor in these. And as questions of 'sensifics' emerge from their present chaos, they too must suggest important changes in educative method.

The subject must however be left here, with one personal word added. For while this Article deals with virtually new and untrodden ground, there are only the old modes of language for expressing it, and moreover, the writer was never trained either to 'mean' intellectually well, or to interpret—or sensify—adequately and accurately. The subject manifestly needs analytic and synthetic powers of the highest order; for while 'sense' is 'common' to the whole mental range, it is so in various ways, and thus is peculiarly difficult to deal with. At best, then, this sketch can but serve as the barest introduction to what seems worthy of ampler treatment by more capable hands. May any over emphasis or exaggeration in the foregoing pages be condoned, written as they were in the hope of drawing attention to the importance of an untried investigation, and with no prejudgment of questions and issues as yet only indicated or implied. If such inquiry and consequent discussion follow, the first object of the Article will be attained, whatever the result may be. As to ultimate bearings and final developments; if, as things are, it were possible definitely to map these out, the investigation asked for would by this very achievement, have proved itself to be superfluous.

Summary of Part I.

Although the disadvantages and dangers arising from the present failure of language to express more than roughly what is termed Meaning or Sense are generally recognised, no systematic attempt to attack these at their root has as yet been made. Neither the process of interpretation nor the conception of Meaning have so far received adequate treatment. This

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leads to the loss of distinctions valuable for thought, and to a low average of interpreting power. Attention is here called to (1) the neglect, especially in education, of any careful study of the conditions of meaning and its interpretation; and (2) the advantages which must accrue from such study.

Much is lost by the present dearth of means of expression and of training in their use. There is not even a word to express what happens when a given excitation suggests something other than itself, thus becoming a 'sign' and acquiring 'sense.' The word 'sensify' is proposed for this. Works on science and philosophy and especially on logic and psychology supply ample witness—both conscious and unconscious—to the need for a special study of meaning, which might be called Sensifics, as no term already in use covers enough ground.

Summary of Part II.

Such a study so far from being impossible seems indicated and called for on every side, and might be made not only practical but attractive even to the youngest child. At present language betrays, largely from the absence of such training, a disastrous lack of power to adapt itself to the growing needs of experience. But this power would soon be generally acquired as the result of the training here suggested, and would even to a certain extent follow a general awakening to the importance of the question.

Definition, though useful in its own sphere, must not be regarded as a solution of the difficulty. Ambiguity is an inherent characteristic of language as of other forms of organic function. Thought may suffer from a too mechanical precision in speech. Meaning is sensitive to psychological 'climate.' Both philosophers and men of science complain bitterly of the evils arising from an inadequate nomenclature and terminology. We all alike, in fact, suffer and lose by this, and by the endless disputation which it entails. It rests with education to initiate the needed 'fresh start.' It is incumbent upon English teachers and thinkers to lead the way, since our language is admitted even by foreigners to have peculiar facilities for inquiries and studies of this kind. Meanwhile it will be something to realise at once more clearly some potent causes of present obscurity and confusion, and the directions in which we may hope for efficient practical remedy.

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IV.—CHARACTER AND THE EMOTIONS.

By Alexander F. Shand.

I.

The Method and Problem of Ethology.

A man's character is by popular thought distinguished from his intelligence; as if it were contained in his feelings and will. Such a one, we say, has a fine intellect but a weak character. Sometimes again it means the personal force that is in a man: some are spoken of as having no character. We can use the word neither in this one-sided, nor in this restricted sense. We can maintain no preferential attitude to the feelings and will over the intelligence. For character is both revealed in the intellect, and partly formed by it,—by its quality and habits of thought,—in its cultivation, neglect, and abuse. "The character of a person," says M. Paulhan, "is in sum that which characterises him, that which makes him himself, not another[1]." It therefore includes the whole mind of man in feelings of pleasure and pain, in thought and volition; and all three elements contribute to its formation.

How then is Ethology as the science of character distinguishable from general psychology? The problem of psychology is on the one hand to analyse all the phases of mental life and on the other to trace their development in the race and in the individual. It has to consider how the infant-mind develops into the child-mind: what may be called the psychology of the stages of human life is a legitimate portion of its province, though little has been attempted in it;—the several characters which belong to infancy, childhood, puberty, youth, maturity, and old age, and the process by which the one is the outcome of the other. Psychology is then a general ethology of human nature, and ethology is necessarily a psychological science. But the one is wider than the other, and the relation between them

[1] *Les caractères*, p. 7.

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that of a general to a special and comparative science. Human nature is, as it is said, at bottom identical, not merely in its cognitive and conative functions, but in its emotions and sentiments as well, in its feelings of pleasure and pain generally. It is this identical human nature which general psychology investigates. But general psychology does not analyse the different types of human beings, it does not attempt to classify these, it does not consider the process of their development, of their interaction, of their transformations. Once we begin to reflect with scientific method on the differential mind or character of men, we pass from general psychology to that special branch of it which Mill named Ethology.

Comparative psychology in its broadest sense may be said to consider not merely the differences between men and lower types of mental life, and the differences in mental development in the animal kingdom, but also the typical differences of human beings as such. Ethology is then a branch of comparative psychology.

This view of the relation of Ethology to the general science of mind is in essential agreement with the first account ever I believe given of their relation by the man who projected and named the new science. In the chapter on Ethology in his *Principles of Logic*, Mill tells us that the science "is a system of corollaries from Psychology[1]," and that while Psychology considers "the elementary laws of mind," Ethology will have to determine "the kind of character produced, in conformity to those general laws, by any set of circumstances, physical and moral[2]." In other words, Ethology will consider, not the universal character of men, but the different types of character which are produced, in part at least, by what we name circumstances. But I think that Mill to some extent inverted the problem of the new science. In many cases, we cannot start from circumstances and deduce the kind of character which would be produced by them. On the contrary we have to consider first what the type of character is before we can deduce the effects of those circumstances. The differences of sex, the differences between individuals, the stage of life to which they have advanced, have so decisive an influence that the same set of circumstances "physical or moral" have different and often opposite effects.

What excites anger in one man will produce fear in another, what stirs desire in one will leave another indifferent or arouse aversion, what makes a man indignant will often make a woman grieve.

But in another direction, the influence of circumstances

[1] Vol. II. p. 453. [2] *Ibid.* p. 449.

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may perhaps be calculated apart from the individual type. We have to consider their influence both individually and their cumulative effect as a class. In the latter case, we do not consider one moment in a man's life, and how he is modified at that moment; but we take his life as a whole, or some considerable portion of it, and endeavour to trace the cumulative effect of the class of circumstances which have been predominant. Over and above the difference in a man's experience, there is a deep and persistent sameness—a rhythm of repeated events which, by slow and imperceptible accretions, moulds the character. Some men lead a calm, others an agitated life: some a monotonous, others a varied life: some are habitually unlucky, have been, at every turn, thwarted by their destiny; others have found circumstances favourable to them. And if we take portions of life instead of the whole, we find through the variety a persistent sameness of experience, which leaves its mark on men and enables us to classify them—the difference between good and bad education, the contrasts of character in the different professions, the lawyer, the priest, the soldier, the schoolmaster presenting distinct types. And wherever we are dealing with the cumulative effect of a class of experiences it may be possible to calculate their universal influence apart from their particular influence on individual types.

With regard to the method of the science, Mill regarded it, in distinction from psychology, as "altogether deductive[1]." In this opinion we must judge him to have been mistaken. As in the general, so in the comparative science, the analytical method is of the first importance. We cannot accurately deduce the modifications which a type of character undergoes in particular circumstances, unless we make at the outset a thorough analysis of the type. The finer our discrimination of its components, the more precise will be our deduction. But Mill has himself given the corrective to his exclusive insistence on the deductive method by his recognition of the value of those empirical generalisations concerning character which are stored in literature. And this "wisdom of life" we may derive as much from our own observation and thought as from books. The science will then be in part inductive; and we may either start from types of character which have been reached by this method, and then consider the psychical connexion of those qualities which have been empirically found to coexist: or we may start from some central and type-forming quality, and endeavour to deduce its psychical effects. For as Goëthe remarked[2], "There is in every character

[1] *Logic*, vol. II. p. 450.
[2] *Conversations with Eckermann*, p. 69.

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a certain necessity, a sequence, which together with this or that leading feature, causes secondary features."—Or lastly, without binding ourselves to either method, we may adopt that which in the situation affords the best promise of success.

With regard to the important question of verification, Mill remarks that "as in every other deductive science, verification *à posteriori* must proceed *pari passu* with deduction *à priori*[1]." But if we take any type the several qualities of which have been found empirically to coexist, it is as true to say that the deduction of the same type from one or more central qualities is as much a verification of the empirical type, as that the latter affords a verification of the *à priori*. We do not know among how many of the qualities of the empirical type there is a real psychical connexion, under what conditions they invariably coexist, what chance coincidence there may be among them, how far there may have been looseness and confusion in the observations: and the psychological deduction may deny the connexion of some of the qualities while it verifies that of others. And it may discover new qualities which popular observation, always more or less fragmentary, has overlooked. Both methods will then to some extent supplement one another's deficiencies, and furnish some verification of the truth which each contains.

But a great obstacle stands in the way of any high degree of exactness in the new science. Psychometry has not yet advanced far enough to enable us to measure the strength of the various tendencies of character. Yet, putting aside the different objects of men's pursuit, we may say that all the differences of individual minds resolve themselves into differences of degree among the same identical qualities,—differences in the development and organisation of some, quantitative differences in the strength, intensity, persistence of others, differences in the degree of quickness of the mental processes: and in the construction of our types we are forced into loose assertions, that they have much or little, more or less, a higher or a lower degree, of a quality common to all men. The recent French works on the subject all labour under this defect; and we can only lessen it by throwing our conclusions into the form, that in proportion to the degree of the quality will be the truth of the conclusions deduced from it. If we could experimentally excite any desire or tendency in a human being, and, as has already been done with some classes of sensation, measure its relative strength, we might then hope to construct an exact instead of an inexact science.

[1] *Logic*, p. 455.

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Ethology is then in the same position as the moral sciences in general; but like them it can make a beginning. In the first place much may be done, and has already been done, in the way of analysis and classification[1]. We have to discover a principle for the classification of the leading types of character as they are found empirically to exist or are embodied in great works of literature, to test their psychological coherence, and by degrees to attach to them subsidiary classes dealing with more specialised and particular tendencies. But human beings are not petrified types, nor are they ever the mere embodiment of a single one. And we pass beyond what may be called the statical problem of the science when we consider the interaction of different types in the same individual, and the changes which overtake them in the passage through the different stages and situations of life. This, the dynamical problem of the science, is far the most difficult, and the French works to which I have referred have scarcely touched upon it. But in the first part of his treatise, M. Paulhan has shown in a masterly way how all characters may be classified according to the degree in which "systematic association" of their different tendencies is developed,—how they may be regarded on the one hand as rising out of a relative isolation of their impulses to higher degrees of organisation, or on the other as relapsing from perfect harmony to strife and anarchy.

Now in what precise sense are we to use the term "type"? A psychological type, we may say, is not the personification of an abstract quality, such as we often find among the characters of Theophrastus, but a complex of qualities possessing an inner psychical connexion. And these qualities must not be accidentally connected by the mere fact of coexistence. They must be such that given one the character of the rest follow as secondary results of this primary quality. Where, then, we find in any empirical type that the various qualities have different centres of attachment and are not all systematically connected with one, we have to say that it is the case, and the normal case, of a plurality of types in the same individual. This is the difference between the empirical types from which we start and the genuine psychological types into which we resolve them: the one will often be, to some extent, an accidental assemblage of qualities, the others will have always a systematic connexion.

I am here restricting the use of the word more than M. Paulhan has done. In the second part of his work, which deals with types produced by the predominance of a single tendency, while he has analysed them with fine discrimination

[1] See especially M. Paulhan's *Les caractères*; also B. Perez' *Le caractère de l'enfant à l'homme*, and A. Fouillée's *Temperament et caractère*.

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and a wide knowledge of life, he has left them standing as so many isolated particulars, so many petrified abstractions, without attempting to deduce their secondary effects. And I have felt the justness of M. Fouillée's criticism upon this part of the work that it is really an analysis and classification of the passions and sentiments, not of genuine types. A single isolated sentiment is a psychological, as well as a practical impossibility. A dominant tendency affects all sides of the character, its outcome is a type, it cannot remain a sentiment. It forms a quality and habits of thought of its own; it organises other sentiments as subsidiary to itself; it leaves its mark on the volition and issues in a characteristic conduct; while, at the same time, it inhibits other qualities of thought, feeling, and conduct, which either are opposed to it or in no way further its interests. There is then no object in using the term 'type' to express an isolated sentiment; and a 'type' will mean always a group of qualities either empirically found to coexist or psychologically deducible from a central quality.

We have seen that a cardinal problem of the science of character is to construct a classification of the various sentiments, emotions, and appetites, or since these may all be regarded as 'tendencies,' to construct a classification of tendencies. Without such a classification we could not proceed in any orderly way in the presentation of the various types. We should have to take them at haphazard as they were suggested. Any systematic treatment of them would be impossible; and everywhere we should be apt to overlook important varieties.

But all the types of character are not due to the diffused effects of concrete tendencies. As M. Paulhan has seen, there is a hierarchy of types which is the outcome of the degree to which "systematic association" is carried. But beside this important difference between human beings in the mere form of their character, there are other cardinal differences which like it are independent of the particular sentiments, desires, and interests which may be found in a man. There is in the first place the degree of rapidity or slowness of the mental processes. Everyone is struck by this difference between one man and another. It is an empirical fact that we have to start from, and is found in conjunction with other qualities which constitute strongly contrasted empirical types. They are familiar to us under the popular titles of the Nervous and Phlegmatic Temperaments. The second important difference is that between what is popularly spoken of as the depth of one man's sentiments and the superficiality of another's, what we should call, in psychological language, a difference in the relative persistence of tendencies. How obvious again is this difference, shown

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perhaps in its most marked form in the contrast between the mutable character of the child and the relative consistency of the man; but also reappearing among individuals, and between the characters of savage and civilized peoples. Any man of some imagination and experience of life can see rising before him two empirical types in marked contrast with one another, connected with these fundamental differences. Lastly there is the difference in the intensity of the feelings of pleasure and pain. We must put aside those feelings of pain which are connected with injury to the organism or which are the result of organic disease or functional disturbance. We have only to consider pleasures or pains connected with what we call sentiments, passions, or emotions. Now it is a fact of experience that some individuals and perhaps certain peoples, as for example the southern Italian, live at a white heat of feeling, that others by contrast are cold and impassive, and that others again are apathetic and indifferent. This difference of intensity is also exemplified in the characters of the child and the man: the eager and ardent feelings of a bright child, the intense hopes, the keen disappointments, contrasted with those blunted sensibilities to which most men come in middle life. This ardent temperament, as it is popularly called, seems also to be named the Bilious—by those who are fond of classifying men according to their complexion,—when it is found coexisting with black hair and eyes and an olive or sallow skin.

Another general difference between men is the difference shown in the strength of their tendencies. But it is, in greater part, derived from those differences which we have already considered. Thus, in proportion as an emotion is intense up to a certain point, is its present strength to control thought or action increased; its indirect or after-strength, in proportion as it is persistent; in proportion as it is highly organised, is supported by other sentiments and has a compact body of systematised thought connected with it, in that proportion is both its present and future strength increased: and its total strength is derived from these factors in conjunction with the force of habit.

Now with regard to all these most general differences between men—degree of organisation of character, rapidity of mental process, the relative persistence and intensity of the feelings,—their meaning when we merely recognise and accept them as empirical facts is quite ambiguous; and what we have first to do is to render it precise. For instance we do not mean that a man who discovers a superior quickness of apprehension and rapidity of thought has the same rapidity at all times, whatever the subject-matter of thought, whether

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or not he is accustomed or suited to it. And a man whose sentiments are superficial does not show the same degree of inconstancy in all of them. Again, many men who are quick in their own field of research, often because of the fine organisation of their attention, are slow to apprehend what is outside. All these cardinal differences have to be carefully analysed, before they are ready for scientific treatment. We have next to deduce the type of character which is produced by these general differences, or, if we prefer to take the problem on the opposite side, to consider the psychological connexion of the qualities of the empirical types connected with them. And lastly we have to attempt the problem which Mill put first, to consider all the modifications which are produced in the type by the circumstances of life. But to carry this out systematically we require to classify them; and in the first place, what do Circumstances mean?

Popular thought is dominated by the dualism of Character and Circumstance. Circumstance is regarded as something external to Character and acting upon it from the outside. But the character of a man includes his thought and experience as well as his emotions and will. And a circumstance which is not experienced is from our point of view nothing at all. Only so far as it is experienced has it any influence upon character. For instance if we are in danger and know nothing of the fact, we are unaffected by it. Not until we know it, and interpret the fact to mean 'danger,' has it any ethological effect. It may have other effects, and our life may be sacrificed in consequence; but no change is produced in our character, unless it is transmitted through the form of an experience. And even the circumstance of good or ill health has only import for our science as change in the 'feeling-tone' of our organic sensations, producing those changes of mood which seem often so causeless.

But circumstance regarded as a part of experience is already a part of character. In that case what becomes of our antithesis between them? The antithesis must fall between one part of character and the remainder: experience on the one hand, and pleasure, pain, desire and volition on the other. But how can we carry through this distinction? A danger that we experience is not merely perceived, but our perception of it is qualified with pain or pleasure, and is itself a tendency, and in the broadest sense conation. Still if we are to take it as all this, the antithesis between circumstance and character loses its point. For it is precisely the alterations of pleasure and pain and the changes of conation, and even the kind of thought aroused which we have to trace to the specific circumstance: and if it

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is to be interpreted as at once all of them, they cannot be regarded as its effects. The interesting question for us is, why the same circumstance objectively considered produces at one time and in one man pleasure, in another, pain, and leaves a third indifferent; why in the one its tendency is so inappreciable that it may be neglected, and in another so far-reaching that he is observed henceforth to be a changed character: and our method of answering the question lies in determining the man before attempting to consider how he is influenced by circumstance. We must then preserve in some sense the antithesis; and it will help us to effect this if we distinguish those two points of view which to confuse constitutes what has been called the Psychologist's Fallacy. A circumstance as it is interpreted by the type itself may be very different from what it is interpreted by us from the outside. What we name a temptation may be no temptation to a given individual. What then have we to consider? We have to consider how this fact for us which we give this name to, when it impinges on an individual as "a foreign something," will be interpreted by him and will modify him. We have first of all to give it its objective meaning before we can consider its subjective meaning for him. The antithesis is then between circumstance as we objectively think of it and name it and his specific character into which it is translated, in which it is transformed and upon which it works. We have to classify wealth and poverty, social position, power, success and failure, society and solitude, health and sickness, climate, family life, training and education, government, the different professions and modes of life, kindness, neglect and cruelty, according to their universal or objective meaning, in order that we may interpret their subjective meaning and influence when they form part of the character of an individual. And the individual himself may adopt both attitudes to his own experiences. 'These circumstances in which I am placed for which men envy me, which they regard as exceptional and fortunate, concerning which they would not listen to my complaint, are felt by me so differently that their meaning is transformed, their felicific influence reversed, and I name them my *mis*fortune.' And it is in this way that the individual must himself interpret the antithesis between his character and circumstance. He thinks of his circumstances objectively, as something outside himself, according to their universal name and meaning, this he takes as the cause, and their subjective meaning and influence as an effect due to his specific constitution and character.

Now we have to classify circumstances, in order that we may subject a type in an orderly way to their influence. With-

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out this classification we should have to take circumstances at haphazard as they presented themselves. We should have no principle to guide us in our search for them, and consequently we should be more liable to overlook important varieties. And in this classification we must follow the objective and universal meaning of these circumstances, in order that we may trace the subjective meaning which they assume in particular types and all that is involved in this for the character.

Now supposing we could accomplish this statical part of the science,—that we obtained a classification both of those cardinal differences between men on which their typical characters depend, as well as of the circumstances which affect them; and that we were able to achieve the more difficult undertaking,—to deduce our types and to follow out the changes produced in them by circumstances, our knowledge of the type would then be more complete than our knowledge of any individual. In the best biographies, in the most finished character-studies in fiction, there is always an incompleteness. We have after all seen only one side of a man. How many other tendencies which we have never detected in him might have been evoked in different circumstances; and that set of the character which the general trend of his experience has imperceptibly formed would have been different or opposite in an altered mode of life.

Now in dealing with types instead of with individuals, we are not confined to the one-sided experiences of a single life. A type has many biographies: and with an essentially complete inventory of circumstance, we could subject it to the whole gamut of human experience. However distant such an ideal may seem, it is not inherently impossible, and by degrees we shall approximate to it.

And while the study of a type has this advantage over the study of an individual, it has another not less important. We can sometimes foresee the feeling and behaviour which a given experience will produce in one whom we know. But there are circumstances the influence of which we cannot foresee. How surprised we often are at the marriages which our friends make! Why should that woman have excited the passion of love in a man who had hitherto been insensible to feminine attractions? We may know in general terms that she must have some beauty or charm for him. But we sometimes cannot find the charm or the beauty. It lies hidden in his own experience of her, and in the meaning which his individual character gives to this experience. He can seldom point it out himself. This love-exciting experience is not to be detached or isolated; it suffuses all his thought and feeling in which she is concerned.

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Thus, while we can understand the general experiences on which, in the abstract, the romantic passion depends, we cannot foresee, in many cases, the particular form which these must assume to arouse it in a given individual. But if we reduce both individuals and their circumstances to types, it should be far easier to deduce the influence of the latter, than when we are considering the perplexing interaction of individual minds and their actual experiences.

A great novelist has an instinctive perception of the feeling and conduct which will be produced in the characters he represents in the circumstances in which he places them. And if, dealing with far more complex characters and experiences than we have to consider in the first instance, he is able to reach conclusions that we accept as truth, our problem should be a much simpler one, had we not to combine his gift of intuitive perception with the power of psychological analysis and deduction.

But if they are in the right who hold that we have a spontaneity of will which cannot be calculated, because it freely chooses between alternatives without subjection to the stronger, then it must be admitted that, so far as this power is operative, it will in practice modify the truth of our conclusions. But as in the physical sciences we have to assume that no miracles occur, so here we must assume that there are no moral miracles, —none, at least, in the sense that a complete knowledge would not explain. And at the most acts of free choice are comparatively rare events in life. They do not occur in our common conative experiences. The situation must be complicated. There must be a conflict of alternatives; and thought must not be capable of reconciling them in a larger interest; nor of effecting a compromise between them; nor of procrastinating the choice. They must persist after thought as opposite incompatible tendencies; and, through their continual interaction, one of them must not be submerged. But both in conflict must wring from us that choice between them which is to decide the issue.

Now rare as any volitions must be which fulfil all these conditions, if they are as they are interpreted, they may have profound influence. But it would still be of importance to know what an individual or a type would become in any given conditions if it did not or could not exercise the supreme prerogative of the will.

In the remainder of the present article we shall be engaged in the field of general psychology. Before we classify the types of character we must know what the emotions and sentiments are, which, in their difference among different men, account for a

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large class of these types. The psychology of the emotions, notwithstanding some recent advance, is still perhaps the most backward part of the science. It does not furnish us with the systematic theory we require, and, in the attempt to supply this, the truth of the statement will become more evident.

II.

The Organisation of the Emotions in the Sentiments.

The attempt to put order into the chaos of our feelings, to grasp or classify them under any intelligible principle not barren or useless, has not so far been attended with much success. The indefiniteness of many of our emotions, the way in which other feelings blend confusedly in them and in which they blend in more complex sentiments, the endless shades of difference between them, make their systematic treatment difficult. Appetites, sentiments, emotions, affections, passions, these terms occur to us as referring presumably to the subject-matter of our enquiry; but we have no clear idea how far these terms are synonymous, how far they mark important differences: nor indeed what are the important differences among our feelings, what is the productive principle on which they are to be classified. The psychology of the feelings can give us no answer to these questions: it has long remained the most unprofitable part of the science. As Prof. James remarks: "its sub-divisions are to a great extent either fictitious or unimportant and...its pretences to accuracy are a sham[1]": nowhere, he adds, are we given "a central point of view, or a deductive or generative principle[2]."

M. Paulhan has advanced beyond this point. He regards the feelings from their conative side, and attempts to classify them as 'tendencies[3].' His classification follows, not the quality or complexity of the feeling, but the nature of the object. They fall into a series according to the degree of its development. At the lowest stage we have those tendencies which refer to the organism or to any of its parts; next those which belong to the life of the mind, to imagination, thought, and sentiment; higher up those which systematise the life-interests of individuals, egoism, altruism; on the next plane, those which have a social object—love of family, class, country, etc.; and lastly those which have a supra-social object—love of perfection, truth, beauty, God.

[1] *Prin. of Psy.* vol. II. p. 448. [2] *Ibid.*
[3] See his classification on p. 115 of *Les caractères.*

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But this classification tells us nothing of the character of the feelings themselves, about which we are in so much perplexity; and before we come to deal with it, we must consider the great and important distinctions among them, above all the distinction between the emotions and the sentiments which furnishes that "central point of view," or "generative principle of which we stand in need."

There are feelings of pleasure and pain which we localise in some part of the organism. They are commonly called bodily pains and pleasures. There are other feelings which are not localised in any object, but which in distinction are felt for an object,—affection for our friends, love of country, interest in business. The feeling of pleasure felt in the society of our friend is not localised in his body, as our own organic pleasures are localised in our own. The interest in our business is connected with and refers to this object, but is not felt and localised in the business premises and the events occurring in them. A feeling of pleasure or pain is either localised in our own body or it is localised nowhere: it cannot pass out of ourselves and be felt in another object: the feeling which belongs to that object, if it have any, belongs to it exclusively, and we can only think of or indirectly represent it.

Now the first class of feelings which are localised in our own body have no object in any proper sense of the term. They are not like our affections, feelings for an object, but feelings in an object. Before a pleasure or pain can have an object, it must first be incorporated in a perception or thought which necessarily has one, not as the object of that thought or perception, but as part of its subjective attitude to its object. My sentiment for my friend is not a mere feeling of pleasure. The feeling of pleasure is connected with a complex thought,—the thought of my friend,—and qualifies it as a pleasant thought. Both this thought and its 'feeling-tone' refer to and have as their object my friend. And as the thought is not localised, so neither is the feeling which qualifies it. But the bodily pain or pleasure is localised, and qualifies a percept or an image, not our perception or thought: it is always somewhere, while the sentiment is nowhere.

Now there is a mixed class of feelings which share in the character of both these classes. It includes all our appetites and emotions which have risen above the instinctive stage of a blind craving or impulse, and have attained to a certain intensity of feeling. Actual hunger, in the adult, is on the one hand a pain localised in the viscera and on the other arouses the desire for food. On the one hand it is a pain qualifying

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organic sensation, on the other it is a pain and pleasure qualifying the thought of food,—a pleasure in the thought of the presence of food, a pain in the thought of its actual absence. In the one it is localised; in the other it is not. In the one it is an object; in the other it has an object. It is the same with our emotions which have reached a certain point of intensity. It is not that the pleasurable or painful organic sensations which we commonly experience in an emotion themselves constitute it, as Prof. James appears to maintain. For fear and anger qualify our thought-attitude to an object beside depressing or stimulating the functioning of our organs and producing painful or pleasurable organic sensations. I fear or am angry with you; my pain or pleasure suffuses and penetrates my thought of you, and is not all localised in my internal organs. And my emotion may become so faint that this bodily concomitant disappears. There might then be some dispute as to whether we should any longer call it an emotion, but about the fact that there are feelings which we do not localise there can be no dispute. Can we localise the moderate degree of hope which as cheerful people is the staple of our lives? If we can, that is not our hope of the favourable event. The essential factor of this is that an unlocalised thought must be qualified with a quite specific pleasure; the accidental factor is that this mental pleasure is accompanied with a change of organic sensation itself qualified as pleasant. Again, love may be raised to such an intensity of passion that it is distinctly accompanied with a bodily localisation; but normally the sentiment as shown in calm affection for our friends is purely mental and the state of our bodily sensations we do not connect with it.

I now come to the verbal question of the use and meaning of the terms. Joy, hope, despondency, regret, disappointment, are commonly called emotions, and we have to maintain that either, at every degree, they have a bodily localisation, or when they cease to have this accompaniment to cease to call them by the same name,—unless we reject this accompaniment as unessential. If we are no longer to call them emotions when they no longer have this, what other term can we apply? The term sentiment has another and more correct employment; and beside there is an important difference between them. We cannot speak of an affection of hope; and passion at once suggests the highest degree of intensity. We should call an emotion a passion when it has reached such a point of intensity that a person loses self-control: thus we speak of the passion of grief and the passion of rage. It therefore seems best to use the term 'emotion' to include joy, hope, despondency, and other

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like feelings, however faint their intensity; and while they still remain emotions at their highest degree, this degree is more definitely expressed by the term 'passion.'

The terms sentiment, interest, and affection do not seem to mark any important difference. We speak of the sentiment of justice, truth, and the moral sentiments generally, of the sentiment of friendship; but of affection for our friends, rather than sentiment, and of interest in our health or business, rather than either: the difference turning upon what we are not considering at present, the different character of the object. We shall then use the term sentiment in a broad sense to include what with more propriety we call affections or interests: and we now turn to the distinction between this great and important class of the feelings and the emotions.

The difference between our emotions and sentiments lies in the different growth of their organisation. And while the latter are highly organised, the former may subsist at a stage of relative isolation and simplicity. But the emotions tend always to build themselves into more stable and complex feelings: and these are the sentiments, which in their turn become the centres of attachment of the organised emotions.

Now the sentiments and interests on the one hand and the organised emotions on the other form two complementary classes. Compare friendship, cruelty, hope, fear, gluttony, anger, amorousness, lust, envy, love of knowledge or art, regret, despondency, self-interest. Do not they perplex us because they are at cross purposes, and are grouped without any principle of classification? Some are qualities of action or conduct, as cruelty; others are sentiments, like friendship, love of knowledge or art, self-interest; others are appetites, as lust. Others again, as hope, fear, anger, envy, regret, despondency, are emotions. Some of the latter, as fear and anger, may occur in isolation, and not organised in a more complex feeling. Others, like hope, despondency, regret, disappointment, satisfaction, elation, envy, always imply some pre-formed sentiment to which they are attached: we cannot hope for an event in which we are not at the same time interested. The peculiar organisation into which all emotions are growing is one in which they are to occur as modes or phases in the life-history of the sentiments. They are in a sense adjectival and qualify a more stable feeling. Whereas the specific organisation of our sentiments,—affection for our friends, the home-sentiment, and every sentiment that we can use the term 'love' to express, as love of knowledge, art, goodness, love of comfort, and all our interests, as interest in our health, fortune and profession, interest in books, collections, self-interest,—these, so far from

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being mere adjectives and qualifying other feelings, are the relatively stable centres to which the first attach themselves, the substantives of these adjectives, the complex wholes which contain in their possible life-history the entire gamut of the emotions.

In the love of an object or interest in it, there is pleasure in presence and desire in absence, hope or despondency in anticipation, fear in the expectation of its loss, injury, or destruction, surprise or astonishment in its unexpected changes, anger when the course of our interest is opposed or frustrated, elation when we triumph over obstacles, satisfaction or disappointment in attaining our desire, regret in the loss, injury, or destruction of the object, joy in its restoration or improvement, and admiration for its superior quality or excellence. And this series of emotions occurs, now in one order, now in another, in every sentiment of love or interest, when the appropriate conditions are present.

Now consider how these same emotions repeat themselves, often with opposite objects, in the life-history of every sentiment which we name dislike or hatred. There is pain instead of pleasure in the presence of the object, desire to be rid of it, to escape from its presence, except we can injure it or lower its quality, hope or despondency according to the chances of accomplishing this desire, elation or disappointment with success or failure, anger or fear when it is thrust upon us and persists, surprise when the unexpected occurs, regret or grief, not in its loss or injury, but in its presence and prosperous state.

We may perhaps say that the hatred of inanimate objects is rare, that this sentiment is reserved rather for human beings: but it is frequently met with in that lesser degree we name 'dislike.' We take dislike to places, to sounds, to sights, and even to names. The musician hates bad music, the man of taste, the architecture of our great towns, the vulgar decoration of the houses, and their 'Victorian furniture.' In our dislike to a place, desire is limited to escaping from it, and by disparagement to lower it in the estimation of others, hope is excited by the prospect of living elsewhere, despondency at the prospect of remaining. And this may arouse in us an impotent rage: and at the thought that years, perhaps a lifetime, may be spent and spoilt in the hated locality we shudder and fear takes us. Consider too how school-boys deface the lesson-books which they hate, and how they would like if they dared to destroy them.

And these same emotions common to our love of whatever object become complicated with new differentiations in the love

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or hatred of a human being. Pleasure in the presence of the object, desire for it in absence, for the preservation of its existence, for its superior quality, anger or fear when it is threatened, hope, admiration, disappointment, regret, recur, and constitute the love of the object, of its well-being; but the specific emotion of sympathy is differentiated. The nearest approach to this in our love of inanimate things, or those great constructions of our thought, business, knowledge, art, morality, is the interest we take in the continuance of the object, in its improvement, or heightened quality, and, conversely, in the pain which any loss of quality, injury, or destruction occasions. Now if we supposed the object were self-conscious and took pleasure in its own continuance and improvement, and felt pain in its injury or lowered quality, there would then occur a sympathy or identical feeling excited in two conscious beings in reference to the same object. Thus where human beings are concerned, there necessarily arise coincidences of this sort which, multiplying in those common situations where danger or injury is present, develop the emotion of sympathy as a new component of the love of the object. And in the process of development, pity acquires a qualitative flavour distinguishing it from the pain felt in the injury or destruction of inanimate objects.

In the next place, the pleasure felt for the excellence or superiority of an object that we love, develops into the new emotions of respect and reverence: respect where there is a superior power or quality which fails to win admiration, reverence where this superior quality is recognised as moral. And both admiration and something of fear blend in this emotion and give to it a flavour and specific quality of its own.

Lastly consider how the regret or sorrow that we feel when we have injured any object that we are interested in or love, where human beings are concerned, and our action is not accidental but the outcome of anger, or the change from love to hatred, differentiates the new emotions of remorse and repentance. Repentance is no mere revival of this same universal sorrow or regret; it has acquired a character of its own with the blame that we pass on ourselves, the futile effort to recall and undo the past, the hope and desire and resolution to make the future different. And remorse too has a character of its own with the fear and even horror that blend with it, the regret for what has been done without the hope and resolution of repentance, but rather with a deep despondency or despair which sees no possible escape.

Passing from love to hatred, sympathy is replaced by

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antipathy, when the object of the sentiment is a human being or one of the lower animals. Antipathy is not merely the universal pleasure in the injury or lowered quality of any object that we hate, not the universal pain in its continuance, advancement and prosperity, but with the blend of the represented pleasure and happiness of another with our own pain felt in his happiness, with his represented pain and misfortune and our own pleasure felt in his misfortune, with his represented desire and our own aversion for its satisfaction, with all his emotions awakening in ourselves a contrary emotion, there arise the new emotions of antipathy, of pleasure in pain and pain in pleasure, each with its own distinct quality. That ignoble pain that we feel in the prosperity, the superior quality, excellence, high station or power, of anyone that we hate, has something quite specific, and has obtained from mankind the name of Envy. It has its converse in the malicious joy in the degradation or downfall of the hated one and the fiendish delight which this sometimes assumes where the degradation is extreme.

Lastly consider how the common desire to injure or destroy any hated object becomes, where a human being is concerned by whom we have been injured, the peculiar emotion of revenge.

We have now to observe how the same universal emotions common to our love of whatever object reappear with further complications in the love of ourselves, in our self-interest, and produce still new differentiations.

The pleasure felt in the superiority of the object, the respect for it when it is a person, becomes in reference to self the specific emotion of pride, easily distinguishable in mere feeling from this disinterested pleasure. And admiration differentiates into another emotion as specific as pride where we take up a different attitude to ourselves. When we regard ourselves from the outside, from the point of view of a spectator, and admire any superiority or excellence that we seem to possess, this self-admiration has so distinct a flavour that the term pride wholly fails to express it and we name it vanity. This is the true distinction between them. It is not that vanity is attached, as it is sometimes said, to smaller and trivial points of superiority and pride to more important qualities, for a man may be as vain of his genius or of his great offices, as a woman of her beauty, and pride may attach itself as much to some useless physical dexterity, as to great talents or great wealth; but it is that over and above the qualitative difference of the emotions and their consequent difference of physical expression, though their objects may be the same in any two instances, they always think of them differently. When vanity is excited we always

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regard ourselves indirectly and from the outside, as we should appear to a spectator, in terms of visual sensation. Hence the looking-glass is the emblem and symbol of vanity. But pride always thinks of itself subjectively and from the inside, without caring for the appearance of the thing. It does not embody the thought of itself in an image which must be regarded as if it were some other self.

Pride, though it is often, is not necessarily more independent in its self-judgment than vanity. A man's pride in himself ordinarily grows with the recognition that his superiority meets with from others; and some plain people are vain of a beauty or attraction which seems to obtain no corroboration from outside opinion. But from the fact that a vain man always considers the appearance of the thing it follows that he attaches more importance to this than to the reality. Hence the tendency of the vain man to become a boaster or braggadocio, and to lie for the sake of the appearance. While the proud man, priding himself on the reality and not on the appearance of possessing it, likes to be sure of the fact, and would by such a make-belief be humiliated by the consciousness that he did not possess it.

Two other distinctive emotions are developed from this common basis of pain in the inferiority of any object that we love, corresponding to the pleasure felt in its superiority. They are the opposites of pride and vanity. The pain in our own inferiority, regarded as an object of our own thought, not of the perception of any one else, has developed the specific quality that we name humiliation, the flavour of which we liken to a bitter taste. It is the opposite of pride and adopts the same attitude to its object. But when the inferiority is not thought of for itself, but from the point of view of its appearance to a spectator, it develops the specific emotion of shame. How certainly this attitude is taken up by the shame-faced person is shown by the instinctive effort to hide the face. Shame is then the direct opposite of vanity and assumes the same attitude to its object. It is usually connected with a quasi-moral inferiority, as with acts of indecency. On the other hand, any action which makes us appear foolish or ridiculous arouses the emotion when we are thinking of the appearance; while to the proud man, regarding his inferiority directly, mute rage at his humiliation. Why the emotion should be excited by any accidental exposure of the person may be explained by the fact that anything which shows what animals we are at once excites the ridicule or contempt of the spectator. For we are agreed to throw dust in one another's eyes, and conceal this unpleasant fact. Hence when that is exposed which is habitually kept hidden we publish

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our inferiority, and shame, the opposite of vanity, is like it engrossed by the appearance of the thing, not by the thing itself. This is witnessed to by the fact that people do without shame in the dark, or when they cannot be seen, what they would blush to be seen doing. The act is the same in both cases, only its appearance is different.

Now the pleasure in superiority, the pain in inferiority are only differentiated into pride and humiliation, or vanity and shame, when the object of thought is oneself. They are always egoistic emotions. Even when we take a legitimate pride in our children or our friends, it is always because they are ours. If they were another's, we might respect or admire disinterestedly, but we could not have excited in us the specific emotion of pride. We may admire the greatness of our country, the talent of our children or friends, but when this emotion blends with pride, it is because we are thinking of self and relating others to ourselves.

Lastly the desire for our own superiority is called ambition, and, whether it adopts the attitude of pride or vanity, always has this reference to self. But, like pride, it may blend with more generous emotions, and attach itself to any object closely connected with us. In the ambition to promote the greatness of one's country, or to advance the welfare of mankind, self has contracted to an insignificant factor. Instead of including others in the microcosm of self, it includes self in the macrocosm of the world. Yet even, when the emotion of ambition is present, there is always the tacit condition that self is to be the agent in the great undertaking.

We have seen how, in the life-history of every sentiment, the same emotions repeat themselves under the appropriate conditions, that where the object of our love or hatred is self or others, and in some degree the lower animals, they are further complicated and develop new emotions: and that the fundamental distinction between the emotions on the one hand and the sentiments on the other, and the principle on which their organisation rests, is that the one are merely adjectival and attach themselves, or more correctly blend as temporary qualifications in those more complex and persistent feelings which they both serve to develop and into which they are absorbed; while the others are the substantival and persistent sentiments which include them, and which in each particular case suffuse with something of their own flavour the emotion which happens to be excited in them.

Those who still think according to the atomistic methods of the older psychologists will fall back upon their familiar argument that the sentiments, as they have been here interpreted, are

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after all only the name of the group of emotions which are associated in them. The day is past when such an argument could persuade men. So far from the actual sentiment being the mere emotion which is actual, or any group of emotions that may be recalled in memory, it is always a development out of them and of the special pleasures and pains of sense, and never their "literal resuscitation, revival or reinstatement." For it is with the emotions as with the sensations of the palate, they cannot unite, and remain outside of one another unaffected by their union. When they combine their quality is changed, a new flavour is distinguished which is not merely the sum of the separate flavours which preceded it. And so when the sentiment is developed out of sensations of pleasure and pain and specific emotions, it has acquired out of the blending of so many experiences a flavour and a character of its own. Have not the love of good living, the love of honour, the love of a friend, the love of man for a woman, each one its own specific quality? When we recall our love, how many memories blend confusedly in it, how many hopes and disappointments which take no distinct shape, the ardent desires of the past, the triumph or failure, the angry passions, regret, remorse or shame; and these make the sentiment what it is, which in its turn suffuses the distinct memories and the actual emotions with its own flavour and fragrance.

Yet, though Love is always a Sentiment, we find it, in the different accounts of the emotions, classed among them. And what leads to this confusion is that when we use the term, Love, we commonly mean a feeling of considerable intensity. But as Emotion, in its popular use, also suggests a high degree of intensity, what more natural than to call love an emotion? We should not make this mistake with the term, Interest, though interest and love belong to the same class of feeling, because interest suggests a low degree of intensity. And with a low degree of intensity, there goes a loss of any appreciable "somatic resonance": and we think of the sentiment as a feeling of low degree[1]. Hence if we had to decide between calling Interest an emotion or a sentiment, we should choose the latter. Now the terms, Sentiment and Emotion, are no doubt applied with great looseness in the popular use, and if we take the difference of intensity which is sometimes meant, and make that the ground of our distinction, we confuse the important difference, we emphasise that which is trivial. We must call love, hatred, fear, anger, hope, despondency, regret, emotions at one degree of intensity and sentiments at another. But popular use itself

[1] See, for instance, Prof. Ladd's distinction between the emotions and sentiments, *Psychology, Descriptive and Explanatory*, pp. 543–4.

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suggests a better interpretation. When it calls the love of justice, truth, beauty, and goodness, sentiments, we are reminded of the higher development of their thought. And if we follow out their organisation on the side of feeling, we see that the sentiments are the ground of the organised emotions, the reason why we feel this or that emotion in these circumstances; that the difference of intensity is a wholly fallacious guide—that any sentiment may be raised to the intensity of a passion by the emotions which are excited in it without ceasing to be a sentiment, and that any emotion may sink to the lowest degree of feeling without by any possibility becoming a sentiment. And as regards the unorganised emotions these are distinguished from the sentiments by their relative simplicity, isolation, and independence, and by the function which they are destined to play whenever they become organised.

The sentiment, as interpreted from the outside, is the thought of an object, as a permanent thing or quality. While the emotion, where it has a thought, refers to some change or event, not to a permanent quality. As the relatively stable thought of the sentiment is modified, and becomes, for instance, the thought of this man whom I like as injured or insulted, or this thing which I like as broken or lost, so an emotion is excited and merged in the sentiment; and the emotion is to the sentiment as this change of thought is to the identity of thought on which it rests. And this identity of thought which refers to the same object with its feeling-tone and conative tendency, which persists through the emotional phases excited in it, is the sentiment.

III.

The Classification of the Feelings.

We have come to recognise that Feelings may be classed according to the degree or character of their organisation. Some are relatively unorganised and isolated. This class may include pleasures and pains of special or organic sensation, all our appetites, and some of our emotions, on the other hand all of them may rise into the alternative class of the organised feelings. To which class any particular feeling belongs is determined by our answer to the question whether it is or is not assimilated by any performed sentiment. For instance we say that the child loves novelty; but this implies a confusion of our mental attitude with the child's. We should say that the child is pleased by new objects. The pleasure which he takes in them, the instinctive impulse to turn away from anything that

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has grown familiar, is the germ of the love of novelty which he afterwards develops when he can distinguish the abstract quality from its concrete embodiment. Then the sentiment of novelty organises and assimilates the particular pleasure felt in new objects, and becomes complicated with a variety of emotions of which these isolated experiences could not become the vehicle. As has been remarked before it is only the more primitive and elementary emotions which can subsist at a stage of relative isolation. While anger, fear, surprise, admiration, and even sympathy, may occur before the varieties of love or hatred have grown out of them; hope, despondency, regret, disappointment, envy, revenge, jealousy, always imply a pre-formed interest in the object. Again, those specific emotions which are developed in our self-love,—pride, vanity, ambition, humiliation, shame,—seem to presuppose the thought of self and interest in self. I doubt whether they would be possible in early childhood before the conception of self had been formed. On the other hand sympathy may be evoked at the sight of suffering before an interest in the individual has arisen, or in our fellow-creatures generally.

The second class of the organised feelings contains the two sub-classes of the organised appetites, emotions, and specific pleasures and pains of sense, and, on the other hand, all the sentiments and interests. These classes with their subdivisions include all the varieties of feeling. The subdivision of the first class we have already seen, and the enumeration of all the emotions of the second class would not be difficult. I have not pretended to give a complete account of them, but it will now be easy to classify any one that has been overlooked in reference to its function in the sentiment; whereas before, with the perplexing mixture of qualities of conduct, sentiments, emotions, undiscriminated, and no principle for their distinction or classification at hand, we had a confused feeling of wandering about a pathless forest which could not be intelligibly surveyed from any point of view.

It is when we come to the subdivision of the third class—the sentiments and interests—that our difficulties recommence; and this part of our enquiry must be deferred. To enumerate them all would be impossible. They are as innumerable as the objects to which our sentiments are attached. We can only hope to subdivide this class into general sub-classes. But here what is to be the regulating principle, are we to be guided by the character of the objects or the character of the sentiments? Apart from their difference of degree, the only important difference that we have found between sentiments is in the content of their emotions which in the love or hatred of human

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beings to one another develop new differentiations. But we have not yet remarked that the entire gamut of the emotions is actualised as a matter of fact in the life-history of but few sentiments. Experiences are ordinarily too monotonous for that; and the conditions on which their occurrence depends have not all been present in the life of an individual in reference to the same object. Hence the sentiment which is developed out of these emotions and pleasures and pains of the special senses will be different in any two cases owing to the different experiences which have formed it. Apart from its different intensities and strength of persistence, it will have also, however faintly, a qualitative flavour of its own. The loves of no two men are the same. The one may be suffused with joy and happiness; the other with sorrow and disappointment. And there is another important difference in their organisation. The sentiments organise within their complex systems, not merely the thought which subserves their ends, not merely the series of emotions which are excited in them, now blended together, now in succession, but also, and in different proportions, other and subsidiary sentiments. How many of the latter are contained in the conscience as subordinate to the interest felt for its supreme end,—love of justice, honour, beneficence and truth. But again in what degree has the supreme sentiment actually organised them, how many egoistic impulses escape from its control, how many quasi-moral sentiments refuse obedience to it, notably what men call honour; and the love of Truth will push its cold analysis even where the sense of decency, or affection, or reverence forbids it.

Other sentiments again are so contracted that they can find room for but few that are subordinate. And where they are dominant, as they cannot enrich the character by coordinating the many affections which a supreme sentiment must relate in a harmonious system, so these must be sacrificed and destroyed. Such is the old man's avarice which starves both himself and others.

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V.—DISCUSSIONS.

SELF-KNOWLEDGE.

THE term self-sacrifice, as used by Green[1] in his argument against the Hedonists, contains an ambiguity which even he, strange to say, does not sufficiently observe, namely that the 'self' which is sacrificed is capable of being understood, according to the predisposition of the reader, in the higher or the lower sense. Of course what Green meant was the sacrifice of individualistic inclination for the sake of personal good, but in general the 'self' of which he writes is somewhat very different from 'inclination.' Again when defining Personality (which he does with avowed diffidence) as 'the quality in a subject of being consciously an object to itself' he involves himself in an analogous difficulty. His hesitation to offer this or any definition of self arose no doubt from his perceiving that the true self cannot be object. Dr Martineau, too, in his controversial chapter on Positivism and its prophet, A. Comte, shows but a feeble apprehension of the difficulty with which one has to contend when asserting the fact of self-knowledge. He asks[2], "Are we not continually *telling* our own thoughts and feelings and purposes? Then is it not ridiculous to assert that we *cannot know them?* And if we know them, it is assuredly not by outer testimony or any use of eyesight that we discern them, but by the inner vision of reflection. What then is the matter with this sort of apprehension? Are they not real *facts* that it shews us? &c. &c."

Arguing in this strain he seems to ignore the fundamental difference between self-knowledge and all other knowledge. The 'facts' referred to are 'real' enough, but they are facts of particular experience, what is vulgarly called 'inner' experience. Being facts of ordinary knowledge, objective events in time, they are not facts of self-knowledge. Knowledge of self is no more involved in the perception of pain or purpose than in the observation of a star. In short Dr Martineau attempts the impossible when he attempts the proof of self-knowledge by means of psychology. Plato[3] and Aristotle had already distinguished various meanings of self;

[1] *Prolegomena to Ethics.* [2] *Types of Ethical Theory*, II. p. 6.
[3] *Vide infra.*

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and Aristotle[1] had pointed out the popular error of supposing that the morally unselfish man is one who cares nothing for himself. The man who 'sacrifices himself' in a noble cause is, according to Aristotle, in the highest and truest sense φίλαυτος: he acts for the sake of that in him which is best, that which is most himself; but his 'selfishness' is a blessing to his fellow men.

It is interesting to examine how the conception of self became progressively defined, and refined, in European philosophy. This process seems to have virtually begun with the enunciation of the famous γνῶθι σεαυτόν; and accordingly it is worth while to trace the history and influence of the precept from the earliest records to St Augustine, from him to Descartes, and on to Kant and his successors. The following pages contain a summary of the information we derive from Plato as to the origin and meaning of these two words which, rightly understood, contain the germ of critical philosophy.

Of all moral precepts KNOW THYSELF is perhaps the most remarkable for a twofold and somewhat paradoxical reason. None has more deeply impressed the imagination, while none has been understood, or misunderstood, in a greater variety of ways. In moral and theoretical philosophy it would appear to have been the root of controversy and disappointment. A cynic might compare it to an apple of discord divinely thrown among thinking men: others might liken it to a prism which decomposes the seeming-simple light of common sense, but into rays for whose re-composition thinkers have ever found themselves strangely unprovided. From the time when, according to the tradition, this precept was first issued by Apollo, and engraved above the portals of his temple at Delphi, to the present time, it has been a sort of moral shibboleth. Received at first with reverence by all, and better known to the ancient Hellenic world than the inscription on St Peter's is known to Christendom, it was long venerated as worthy of its divine authorship. It was adopted by Socrates as the foundation of his practical creed; it furnished Seneca with consolation in the presence of death; it became to St Augustine a strong defence against scepticism: it continued to be, in mediaeval times, a theme on which moralists dwelt with seeming profit and real delight; and it was finally rejected by Hume and Comte, and contemptuously dismissed, as impracticable, by Mr Carlyle. Now it is hard to conclude that a precept which has for so many centuries fascinated the intelligence or imagination is itself unintelligible and commands what is impossible.

For the Hellenes it appears to have originated in the worship of Apollo. At all events its origin was distinctly religious. We read[2] in the *Protagoras* that the seven sages, Thales, Pittacus, Bias, Solon, Cleobulus, Myson, and Chilon, customarily expressing themselves in pregnant apophthegms, assembled with one consent at Delphi, and dedicated to Apollo in his temple the firstfruits of

[1] *Nic. Ethics*, IX. viii. [2] Plato, *Protagoras*, 343.

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their wisdom; inscribing there two maxims 'now on the lips of all men,' viz. 'know thyself,' and 'nothing in excess.' In the *Charmides*[1] we have another reference to the tradition which ascribed the maxim to some of the Sages. But this tradition had, even for Socrates and Plato, no assured foundation: it had gained favour with the 'rationalists' of the time, but failed to displace the common belief that 'know thyself' was originally uttered or inspired by the god.

Stobaeus[2] aims at collecting the principal sources of information respecting the Delphic precept. This author quotes, among other writers, Porphyrius, whose words may be freely rendered as follows: "Whether Phemonoë or Phanothea, the daughter of Delphus, enounced this oracle: whether it be the dedicated offering of the Sages, or we must accept the statement of Clearchus that, when Chilo enquired of the god—what was best for man to learn? the Pythian returned 'know thyself' as his answer; or whether (as Aristotle says) the maxim stood inscribed in the temple before Chilon's time: whoever was its author—for this is matter of dispute—unquestionably its utterance was due either to the god himself or to his inspiration." From this we gather that all was uncertainty as to the origin of the celebrated saying. If Plato and his contemporaries had, as they really had, lost the clue to its source, it was not likely that their successors should be in this respect better off. Accordingly we must be content with what little knowledge of its origin we gain from the Platonic dialogues. But we know from them, and from a host of witnesses, one thing for certain, that this piece of counsel, know thyself, stood conspicuously engraven over the entrance of Apollo's temple at Delphi.

As regards its interpretation, it was accepted, apparently, at first in a purely ethical signification. Heraclitus, the earliest Greek philosopher whose remains contain any allusion to it, seems to have given it a moral import. In fragment 106 (Bywater) he says: "It behoves all men to know themselves and (? thereby) to exercise self-control." Thus *γνῶθι σεαυτόν* was for Heraclitus, as afterwards for Socrates, equivalent to *σωφρόνει*.

Its influence upon philosophy, however, did not become in any degree marked, until it awakened the reflection of Socrates. For his views of its meaning we must look to Xenophon and Plato.

In Xenophon[3], Croesus tells how he had consulted Apollo at Delphi as to his family, and received advice from the oracle. He proceeds with the story thus:—"Sons were born to me, and therein Apollo's word was not false: but nought did these sons profit me. For one was dumb, and the other was cut off by death in the prime of manhood. Whereupon I sent again to ask the oracle what I should do to enable me to pass the remnant of my days most happily. He replied:—

'Know thyself, Croesus; then happy wilt thou live and die.'

[1] 164, *d*. [2] *Flor.* XXI. 26.
[3] *Cyropaedia*, VII. 20—25.

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"I rejoiced at hearing this, for I thought surely Apollo offers me happiness on the easiest terms. Other men, indeed, one might or might not know: but each must know himself." Croesus then goes on to describe how far he was mistaken, and the disasters which in consequence befel him. He engaged with enemies for whom he believed himself a match, because he did not really, as he had imagined, know himself; and the result was his defeat and captivity. He concludes by saying: "Now at length I do know myself, and have been righteously punished for the self-ignorance whereof in former time I was guilty." Thus for Croesus here, i.e. for Xenophon, to 'know oneself' meant 'to know how much, or little, one was able to do,' 'to know one's own power.' That in this Xenophon represents the teaching of Socrates is probable, and the more so because in the *Memorabilia*[1] he brings Socrates himself before the reader as thus interpreting the Delphic maxim. Conversing with Euthydemus, Socrates is there made to enquire if the latter had ever gone to Delphi and seen, written over the temple-gates, the two words 'know thyself,' and if so, whether he had considered them seriously, and tried to understand them. Euthydemus replies that he had of course seen the words there, but had made no great effort to understand them, their meaning having seemed so manifest as to demand no such effort for its discernment. "If I did not know myself," he says, "what on earth should I know?" Socrates, as usual with him making the seeming-easy appear difficult, goes on to show that the fact is not as Euthydemus supposed; until the latter at length confesses that the maxim is one which demands the most serious attention, not only because of its importance but of its intrinsic difficulty. He asks Socrates to explain how he must begin to know himself, and is told that the maxim enjoins the knowledge of one's powers, as well as the discrimination between good and evil. Thus the interpretation given to it by Croesus is adopted and amplified. Here we in all probability have before us the interpretation placed upon 'know thyself' by the historical Socrates. But the Platonic Socrates pushed his enquiries deeper. For while the ethical bearing of the maxim is never quite lost sight of, it is connected with, or made to rest upon, a metaphysical exposition.

The first passage of Plato to which I shall refer for his view of the meaning of the oracle is in the *Philebus*[2], where Socrates declares unhappiness to be due to self-ignorance, 'the state antagonistic to that prescribed for men by the Delphic inscription.' We here learn that all who are ignorant of themselves exhibit this ignorance in one or other of three ways, i.e. as regards their minds, their bodies, or their estates. It is in the first respect that most men fail; ignorance of their minds being characteristic of the multitude, who for that reason are easily entangled in the meshes of false philosophy. 'This condition is one of utter wretchedness.'

[1] IV. 2. [2] p. 48.

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Next I return to the *Charmides*[1], where Critias insists on the urgent necessity of self-knowledge, as the essential feature, or factor, of self-control. "This," he says, "is what the god at Delphi enjoins upon his worshippers in the words 'know thyself'; χαῖρε, the ordinary salutation which bids 'rejoice,' not being the best, as the god well knows, and shows by this inscription. Different in form as the two expressions—'have self-knowledge,' and 'have self-control'—are, still in substance they are identical." At this point Socrates takes him up and asks, what is the good of self-control, or temperance, thus understood? And first, what is meant by the knowledge of self? Temperance or self-control is, he admits, a good thing: but he doubts whether if regarded as equivalent to self-knowledge it would be of any service to us; and raises the question, to begin with, how self-knowledge is possible. Thus we find initiated the long debate continued down to our own day over these words and their meaning. In the dialogue before us the conclusion at which Socrates arrives in his argument against Critias is that self-knowledge is, if possible, unique and utterly without analogy. He does not pronounce dogmatically that it is impossible. His respect for Apollo prevents him from going so far. But he unhesitatingly declares his complete inability to see *how* it is possible. As a corollary (with which we are less concerned), he shows that the interpretation of temperance as identical with self-knowledge would have the effect of rendering this virtue inconceivable, or useless.

He argues as follows:—The sciences and arts are not forms of self-knowledge. No form of knowledge with which we are acquainted, or which is of any profit, is of this sort. Each science or art is directed to an object, to be known or produced, quite different from itself. If self-control be a form of knowledge comparable with any of these, it must be knowledge, not of *self*, but of somewhat else. Critias admits that it is indeed peculiar, but asserts that, while all other forms of knowledge refer to objects distinct from self, this (σωφροσύνη) refers to self directly. He further says that self-knowledge involves all other branches of knowledge[2].

Socrates, having gained some dialectical advantages over Critias on side-issues, resumes the main question, and again calls attention to this strange peculiarity of self-control as identified with self-knowledge, viz. that while all other forms of knowing have objects distinct from self, this alone is directed upon self. Compare the exercise of the perceptions of sense. When one sees, he sees some colour, not his own seeing, which, in fact, he cannot see at all. When one hears, he hears a sound of some kind; his hearing does not hear itself; and so with the other special forms of sense-perception. None is object to itself. The case is similar in desiring. Desire is directed to some form of pleasure or pleasurable

[1] 164, *seqq.*

[2] I desire to call attention to this remarkable statement, the importance of which will hereafter appear more fully.

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activity, not to desiring itself, as its object. Fear is to be regarded in the same way. Of fear which fears no formidable object or event, but only fears itself, we can form no conception. In short, there is no such thing. Nor is there a form of opinion directed to itself, and to no object beyond itself. Yet, according to Critias, when we come to knowledge we find a form of this which is the knowledge of no fact, no truth or object, in particular, but is a knowledge of itself and of other knowledges. This, says Socrates, is astonishing. To find a parallel for it, we should be able to point to a faculty of seeing, which sees itself, and is therefore coloured; or to a faculty of hearing, which hears itself, and is therefore sonant, and so on.

Socrates will not declare self-knowledge impossible. He feels himself to be but a human being, and too weak to decide such a mighty issue. We notice a slight irony in his tone at this point. But he is resolved not to grant that self-control or temperance consists in self-knowledge until he can ascertain of what use it would be if so constituted. Accordingly he challenges Critias to prove 1st that self-knowledge is possible, 2nd that if it be identical with temperance, this virtue is of any service whatever. Needless to say, after this, that Socrates vanquishes his opponent; overwhelming him with arguments to show that knowledge which is merely of self is of all knowledge the emptiest, and is in fact no better than sheer ignorance. It is also as practically fruitless as speculatively hollow. Socrates has too much respect for the virtue of temperance or self-control to allow, for a moment, its identification with a hollow sham like self-knowledge.

Here we find some of the cardinal difficulties of the precept 'know thyself' pointed out by Plato with unsurpassable clearness and force. The investigation of its meaning, commenced in the interest of morality, is promptly extended to metaphysics. And in this dialogue we are taught that self-knowledge, strictly taken, involves a difficulty insurmountable by human, or at least by Socratic, intelligence.

Plato's attitude towards the question would seem to have somewhat changed, if we may trust the evidence of the first *Alcibiades*[1] where (as in the last passage) special prominence is given to the metaphysical, or rather psychological, bearings of the precept—'know thyself.' Starting from the expression to "take care of oneself," Socrates endeavours to sound the full meaning of this expression. And first, what *is* self? If one does not know this, how can one take care of himself? Or, if one tries to do so, without knowing what self is, may he not make some gravely disagreeable mistakes? To take care of ourselves rightly we must obey the Delphic maxim which commands us to know ourselves. Now what merely *belongs* to me is not myself. So with my clothes; and so, also, with my limbs and body. When one takes care of his clothes,

[1] 127 *seqq.*

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or of his limbs and body, *e.g.* by gymnastics, he does not thereby take care of himself. Hereupon Alcibiades breaks in with the remark that sometimes he had supposed the Delphic injunction to be the easiest ever given, but that there had been moments in which it seemed to him most difficult. Both he and Socrates agree that obedience to it is indispensable if one is to rightly take care of oneself. Hence the maxim requires study. In the course of the succeeding discussion they agree that self is identical with mind, or soul. It is the first personal self, the I or You who converse together. I when I converse with Alcibiades address myself to himself—not to his clothes or body or other belongings. I address myself to his mind—his intelligence. It appearing plainly to Alcibiades as to Socrates that a man himself is distinct from his clothes &c. and from his body, the question is raised—What is this self? In the negative proposition, as to what self is not, they agree. But to this question of Socrates, asking for a positive definition of self, Alcibiades replies that he cannot answer. Socrates coming to his aid defines self as the agent who employs the body as instrument.

But how to *know* this self is the next question. Now it cannot be known directly, but it can be known indirectly. This Socrates explains and illustrates as follows. The eye cannot see itself directly, but may do so indirectly by looking into another eye, and beholding its own image reflected in the pupil of that other eye. In a way analogous to this the soul can know itself, *i.e.* not directly, indeed, but indirectly. It can look into another's soul, and there behold its own reflection. And as it is in the pupil (which to Plato was the seeing part—the part of the eye most immediately concerned in vision) of another's eye that one's own eye sees itself reflected: so it is in another's faculty of knowing and reasoning that we best discern the reflex of our true selves.

In this passage Plato has evidently not surmounted the grave difficulties expressed in the former, but merely evaded them, by substituting indirect for direct self-knowledge and contenting himself with the former. That he only evades in this way the difficulties he so clearly saw I need not stop to show. I am not now criticising Plato, but merely relating his attempts to construe the Delphic maxim, so as to render it first intelligible, and then practicable.

The above passages are those in which Plato officially addresses himself to the discussion of the precept. They virtually contain all —or at least the basis of all—that he has to say of its interpretation. Self is for him the soul: and soul expresses itself in the first personal pronoun—the I, by the thought, or energy of which a man distinguishes himself from other persons, and from all the world. That a man should know this self, in the obvious sense of the word 'know,' *i.e.* as object, is, Plato concludes, impossible. This conclusion appears in the *Charmides*. For though Socrates there seems to hesitate about pronouncing it, the effect he leaves upon

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his hearers' minds is this. He saw that neither by introspection (as it is called) nor by any other form of observation can self—the true subject—be directly apprehended. All attempts at direct self-knowledge are doomed to disappointment. Negatively they are of use. In the effort to know himself one at least may determine what he is not. But positively such attempts lead only to the vain iteration—I am I. Consequently the god at Delphi could not (Plato reasoned) have meant 'know thyself' to be understood of direct knowledge—objective knowledge—of self. There remained only the indirect. Hence it is by knowing the selves of others that we best come to know ourselves. This admission of indirect self-knowledge is of the utmost importance. We shall not here enquire how, if it be impossible to know our very selves, it is possible to know the selves of other persons. But we may see in the admission—that indirect self-knowledge is the only valuable or feasible form of self-knowledge—a germ of thought which afterwards grew and flourished. For the avenue of speculation thus opened up by Plato is much wider than appears from the terms of the dialogue from which we have quoted. Man comes to know himself, not only by the study of other men—their thoughts or acts—but by all methods of study in which any objective truth is attainable. He attains self-knowledge in the highest possible degree when he comprehends the world as the revelation of a system of ideas, which are ultimately but phases of self. This doctrine was otherwise developed by Aristotle. It enters largely into his treatise *De Anima*, but finds its culmination in his *Metaphysics*. It is the legitimate outcome of a train of reflection (first on Plato's, then on Aristotle's part) which was originally started by an impulse derived from the Delphic maxim—know thyself. This doctrine we shall not here examine, but continue our review of the precept to which it owes so much. Consideration of the doctrine itself will require a fuller and more searching study of the writings of Plato and Aristotle. For with these authors it began in the history of philosophy: nor have any of their successors added in this direction much, except explicitness, to their speculations.

To prevent misconception of Plato's attitude we must observe that while (as we have seen) he dismisses as futile every attempt at direct self-knowledge, he is far from suggesting that self is a 'fiction.' The passages already referred to, as well as his writings generally, prove how earnest and deep was his assurance of the reality of the personal self. But the *Phaedo* particularly demonstrates this. Here he undertakes formally to establish the doctrine of immortality, *i.e.* to vindicate for the soul a reality not merely empirical but transcendent, and not merely after death, but before its connexion with the body has begun. And at the close of the dialogue a most interesting passage seems to have been introduced for the special purpose of showing that the soul which had been proved immortal is no other than the personal 'self' of each man. Fearing that a long discussion

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occupied with the notion of a third-personal entity called Soul—Ψυχή—might, however formally conclusive, fail nevertheless to come home to the personal convictions of his auditors as something of nearest and dearest concern to each of them: and knowing the feeble, or misleading, effect of merely logical discourse, as well as of the associations connected with the words and idioms of common language: Plato appears to have devised and introduced the following dramatic episode for the very purpose of finally driving his conclusion in upon the hearts of his hearers, and correcting their lingering doubts and misconceptions. Crito has asked him how he wishes to be buried for he is now just about to drink the hemlock. Socrates replies thus:—"I cannot make Crito here see that I, who have been and am conversing with you all, am the veritable self of Socrates. He still thinks me identical with this body, which he will shortly behold a corpse; and this is why he has asked how he shall bury *me*. All the long discourse I have held with him and you to prove, that when I have drunk the hemlock I shall be no longer with you, but shall have gone to the happy abode of the blessed—all this discourse seems to him to have been but idle words, spoken in the idle wish to comfort myself and you. Give him then my best assurance that when I have died I shall be no longer here, but shall have departed; in order that he may bear my death with more composure, and may not, when he sees my body buried or consumed by fire, weep for *me*, as though *I* suffered this cruel treatment; or say—'I am now laying out Socrates,' or 'carrying Socrates forth to burial,' or 'heaping clay over Socrates in his grave.' For indeed Crito, my friend, I want you to lay to heart this truth, that the use of such incorrect terms is not only wrong, but engenders a peculiar evil in our souls. Be of good cheer, therefore; speak of burying my body, not me; and pray dispose of it in the way you think best, and most usual."

The incorrect use of terms here referred to is that which represents Socrates himself as identical with his body. This indeed is a use of terms common to all times and idioms. But that it was understood and its fallacy exposed by Plato, we learn from this quotation. The dramatic power and propriety of the scene from which it is taken is equalled only by the keen practical insight which thus makes Socrates finally and feelingly declare that the soul of which he has hitherto spoken is Crito, is Phaedo—is each friend in turn—the personal existence—the very self of every one of them.

JOHN I. BEARE.

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THE 'TYPE-THEORY' OF THE SIMPLE REACTION.

PROFESSOR BALDWIN'S evasions are exceedingly skilful, and the eruptions of polite invective which usually follow them exceedingly telling. But those who have followed this discussion with the purpose which I had in beginning it—the purpose of finding, if possible, the true explanation of the results of psychological experiments upon the duration of the simple reaction—will refer from his latest paper to mine, and read comparatively. I shall therefore assume that they have noted the importance of Professor Baldwin's admissions (*e.g.*, p. 81), promises (*e.g.*, p. 85) and qualifications (*e.g.*, p. 89), and proceed at once to the special points emphasised in his argument[1].

1. As to the Leipsic procedure, I can only repeat deliberately what I have before deliberately stated: that, so far as my knowledge goes, no subject who has been found capable of reaction (of giving approximately the same response to the same stimulus in a series, say, of fifteen trials, after practice) has been neglected either in the parent or in any more recently established laboratory. It was Martius—one of the contributors to the Leipsic theory—who first analysed what is now known as the "central" form of the simple reaction, a form which is neither sensorial nor muscular. In the Cornell Study from which Professor Baldwin quotes the 'disposition view' are given the times of several observers who did not show the sensorial-muscular difference; and that although it is expressly stated that the object of the Study was not to examine and account for these divergences from the norm. In face of these and similar facts, the charge is made that I (and, I suppose—else the matter would not be important—the Leipsic school with me) think that certain results "ought to have been suppressed," and that certain cases "ought not to have been investigated[2]"!

[1] I give one instance of the way in which Professor Baldwin can parry an objection. In his *Psych. Rev.* Study he identified the 'disposition view' with the Leipsic theory. I urged that the 'view' was not a theory at all; and that the type theory had to meet, not it, but the Leipsic theory proper,—something quite different. He now says, in effect: I grant that the view is not a theory; but that leaves my type theory in a better position than ever, since it *is* a theory. To which I, of course, reply that the rejoinder is formally correct, but that the objection holds as strongly as it held before, inasmuch as no comparison of the type theory with the Leipsic theory has been carried out.

[2] Nine gentlemen took part with me in my Leipsic Study. I published the results obtained from Dr Meumann, Mr H. C. Warren and myself. There are consequently seven (not six) to be accounted for. One devoted almost all his time to the apparatus. One was called away on military service early in the course of the investigation; the series which I have from him promise well. One found the apparatus too complex, and its management too tedious, and withdrew from the research group. One

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2. I stated that there were many ways of testing memory type besides that of the reaction experiment. Professor Baldwin challenges me to produce my methods, remarking that he knows of none which are conclusive except those of introspection and pathology. I was referring to the normal mind when I made the statement; and as all psychological experiments on the normal mind, the reaction experiment included, follow or should follow the introspective method, I am afraid that a list of my methods will not broaden Professor Baldwin's knowledge. However, I recognise the justness of the challenge, and give the laboratory and other methods (co-ordinate with the reaction method as sub-forms of introspection) which I have found useful[1].

Methods of Investigating Memory Type. (1) I believe the best method for the determination of memory type to consist in the introspection of a trained observer at times when consciousness is, so to speak, off its guard. He must educate himself to take his mind unawares when he is remembering, or failing to remember. All sorts of rememberings—cases referring to all the different sense departments—must be noted. This, the most direct way in which introspection can be practised, is also, I think, the most fruitful. I have employed it for five (not 'one or two') years; and have only refrained from publishing my results in detail because, as I said in my previous paper, some facts are still obscure to me. (2) I have

gave such curiously slow reactions that they were hardly reactions at all. I was advised by Professor Wundt to continue work with him, but he left the laboratory for a reason which I cannot recall. One was found to be colour-blind, and left my group for another in consequence. I have many series from him, which may be useful some day to compare with those taken from other colour-blind persons. One was unanimously—himself included—referred to the category of incapables in this department of work. It would have been interesting to study his irregularity (here I heartily agree with Professor Baldwin): but that was not the object of my inquiry. It would have demanded simple experiments in many sense spheres: I was desirous of making complicated experiments in one. The last participator was the 'odd man' of the group: a very useful personage, liable to be called upon at short notice to replace an absentee as experimenter or subject, in order to prevent interruption of the work. His results were good; but they were too scanty to be published, and were not intended for publication.

Only one of the seven, then, was rejected on the ground of incapacity: though others might have been, had they continued with me. And it is surely evident that irregularities cannot be explained till we have norms whereby to explain them; *i.e.*, that it was more important to proceed with the original research than to turn aside to examine the single case. This is to me so obvious, that I almost wonder whether Professor Baldwin and myself are not using the term "reaction experiment" in two totally different senses,—such as those indicated by Dr Rivers, *Journ. of Mental Science*, Oct. 1895.

[1] Is it illogical, as Professor Baldwin implies, to state that there are many methods of testing type, and yet that the elucidation of type is difficult? There are many methods of learning Greek.

In *Nature* of Dec. 5, 1895, a reviewer says: "Surely we all know what is the particular language of our own translation of experience." If we did, all the method-work—reaction and other—would be needless.

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tried to get at memory type by questioning, with as absolute as possible avoidance of suggestion. This method can be usefully employed only where the subjects questioned have a general knowledge of psychology but are ignorant of the doctrine of memory type. Its results check and are checked by those of the foregoing and next following methods. (3) Questioning with suggestion is a method covering all such tests as Mr Galton's breakfast-table recollection. It has grave dangers, and must be used with great caution. I have tried to check it by what is called the "method of reproduction,"—the subject being required to reproduce his memory image in objective form; and by an error method,—the memory image being compared with some objective standard. Neither check is very easy of application. But my results lead me to think that a method may be perfected, under this general head, which will be especially valuable for the estimation of the relative importance of the different memories in a given consciousness. (4) Another way of testing the relative importance of memories, or the fixity of a particular memory, is the following. A series of experiments on memory is made, with no directions to the subject as to the way in which he is to memorise. He is encouraged to be as full as possible in his introspective remarks. From these, checked by special experiments, the experimenter ascertains the type of memory employed. A new set of experiments is then begun, in which the subject is told to remember in a particular way, different from the way of least resistance. The experimental results and the subject's introspection show whether the shift of type is successful, or only partially or sporadically possible, or impossible. (5) Sometimes two types are used in one and the same act of remembrance: introspection reveals the fact, but cannot say, under the ordinary conditions of memory, which type is the more indispensable. Experiments by the method of reproduction, checked by others with voluntary suppression, are again useful. (6) It is very important to determine whether non-employment of a type is due to nature or habit and education. I am this year trying to get a reliable method of investigating the problem, and have obtained good preliminary results from two forms of the method of reproduction. (7) Another method of testing type in general I owe to Professor M. Washburn. Psychological experiments are often made under distraction: the subject is required to judge of the difference or likeness of impressions while he is adding numbers, etc. The mistakes made in this addition, etc., are indicative of type: if one sees the figures to be added, one's mistakes differ from those made by a subject who hears the numbers spoken as he adds them. (8) Mr A. Fraser has shown how a writer's memory type can be determined from his writings (*Am. Journ. of Psych.*, IV., pp. 230 ff.). This is the method which should replace 'surmise' in the case of Donders.

3. Professor Baldwin wrote of the subjects of his Study as follows (italics mine). "The reagents were, besides the writers (B. and S.), Mr Faircloth (F.), a student who had had *only* the experience gained from the practical work in this subject of the course in Experimental Psychology. His reactions were ready and unconfused, and *from all appearances* he was a normal and more than usually suitable man for such work. The fourth, Mr Crawford (C.), is an honour student in this subject in Princeton. His reactions were *taken in the course of another investigation*, and being so *few in number*, they are included only because they give a certain case of a capable reagent whose sensory is shorter than his motor reaction.

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We hope to test him further." I read this to mean that the authors believed their two reagents to be reliable subjects, but were a little doubtful as to the extent of their practice. Hence I said: "The greatest reliance is placed upon the times of B. and S." It was an instance of the psychologist's fallacy: had I written the paragraph, I should have meant what I took it to mean. I am sorry that I misunderstood the writers[1].

4. I come to the matter of Professor Baldwin's own reaction times. In his *Senses and Intellect* he remarks, in general terms, that he had anticipated Lange's discovery of the sensorial-muscular difference. Lange found that the difference averaged one-tenth of a second (*Phil. Stud.*, IV., 494; Wundt, *Phys. Psych.*, 4te Aufl., II., 311). Many subsequent experiments have confirmed this result (*e.g.*, those published in the *Phil. Stud.*, VIII., 144; and those of the Cornell Study before alluded to), and it is now generally accepted by 'the Leipsic people' as the normal difference between the two forms (Wundt, *loc. cit.*; Kuelpe, *Outlines*, 408, 410). If Professor Baldwin anticipated Lange, his times must have shown an original difference of some 85 to 115 σ. If they did not, he did not anticipate Lange.

The differences between the times given for himself in his Study are, as I said in my earlier paper, 29, 7, 12 and 46 σ. No one of these is anything like the sensorial-muscular difference. The 7 and 12 are times no larger than the average *m.v.* of the muscular reaction (about 10 σ); an *m.v.* of 30 σ is not uncommon in the case of the sensorial form; and 46 would be a typical "central" difference. Either Professor Baldwin is mistaken in thinking that he anticipated Lange, or his times have changed since he wrote his *Senses and Intellect*. S.'s differences are 51, 40, 79 and 40 σ. Taken as absolute times, these would all be "central," though one shows an approximation to the true sensorial-muscular difference. I do not think, however, that the differences can be treated in this way, since neither B. nor S. gave what would be ordinarily regarded as a muscular reaction. The times are 171, 149, 164, 138; 195, 184, 158, 179 σ. These are all, in my opinion,—and I believe that

[1] Just as, I am sure, Professor Baldwin will be sorry that he jumped to an interpretation of the sentence in my Leipsic Study, which turns out to be very largely wrong. I must be more accustomed to making mistakes than Professor Baldwin is; for I find it impossible in that case to work myself up to the height of moral and intellectual indignation from which he looks down upon my misreading here.

My presumption that the writers were working definitely upon the type theory from the outset was based on the statement that one of the "questions set for research" was that of "the differences of reaction times for different individuals under identical conditions."

In the paragraph in which he insists that the greatest reliance was *not* placed upon the times of B. and S., Professor Baldwin writes that these times are "very neutral to the discussion." Yet they receive quite detailed treatment in his Study in the examinations following the two Tables. Why?

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those familiar with chronometrical results will agree with me,—more or less "central" or mixed reactions. The muscular reaction to sound averages 120 σ[1].

5. Professor Baldwin resents my method of appraising his theory. I confess that, when I am trying to form a theory of certain phenomena or to estimate a theory already set up, I like to have the facts 'catalogued,' ticketed and weighted. Professor Baldwin objects to bringing facts together: he distributes them sparsely in a matrix of theory,—like the infrequent plums in school plum-cake. Then, if the critic complains of the quality of the compound, he says: But I have plenty more plums in the pantry. How does that help the present consumer?

The type-theory has been written about in a medical weekly, a philosophical bi-monthly, a psychological bi-monthly, and a book. Now we are told that its presentation is not yet complete. I did not, of course, know this when I criticised it. Nevertheless, I do not regret the criticism: since it may prevent overhasty acceptance of an attractive hypothesis, and may impel Professor Baldwin to show his full hand to the psychological public.

Something might be said, I think, from the ethical standpoint, of this piecemeal doling-out of a scientific theory. Had Professor Baldwin's article left me a shred or two of moral character, I might have made bold to say it.

6. A few minor differences remain to be cleared up. I deal with them in a foot-note[2].

[1] Professor Baldwin says that his times "have only changed in that the distinction is less marked than it used to be; and this I go [to] the trouble to explain in the same article as probably due to habit and practice." In my copy of the Study there is not a word of this explanation. The change in the author's times is not once referred to. A general statement is made about habit towards the end of the Study; I commented on it on p. 514 of my criticism. It does not contain any the most remote trace of personal reference.

[2] (1) "How can Kuelpe say beforehand that the muscular form will turn out in each case to be shorter than the sensorial?" If Professor Baldwin will read Kuelpe's *Studien* articles,—or if he will even read on for a single page of the "Outlines," from the place of my quotation,—he will find Kuelpe's answer to this question. (2) "Is not the fact that *F* is a musician something of an explanation of his auditive 'disposition'?" Not necessarily; not *i.e.*, if other musicians do not show auditive dispositions in their reactions. It is just here that facts are so useful,—or so obstinate. (3) Defect of vision might, certainly, lengthen reaction time. I do not see that this helps to explain the reaction itself. (4) The rest of the paragraph which has called forth these last two remarks is obscure to me, in spite of many readings. The type theory would hardly be a theory of the *geistige Anlagen* which it presupposes, even if it fitted all the reaction facts. It surely posits memory type; it does not state the conditions under which one or other type may be looked for. I fail to see, therefore, how its application can be 'an investigation of the so-called 'dispositions' to find out what they really are.' The Study, indeed, dismisses this problem (p. 78): it is evident, we read, that attention is now motor, now sensory, differing in individuals with type,—"apart quite

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In conclusion, I cannot but express my regret that Professor Baldwin should have seen fit to write a dialectical and personal rejoinder to my criticism, without furnishing new facts or reasons for the absence of facts in earlier publications. A good deal of his reply, and therefore of this answer to it, might have been disposed of in private correspondence. Until the promised support is brought up, the theory remains what it has been,—a very happy idea, or ingenious analogy, apparently natural and probable, but (so far as published) based upon an altogether insufficient substrate of fact.

I also regret Professor Baldwin's attitude to the "Leipsic people." He is a professor of experimental psychology; he must know the literary history of reaction theories,—he must know how much patient work the "Leipsic people" have done, for how many years,—how much the different theorists differ, and how the central theory has advanced,—how the theory compares with other theories, and how adequately it covers the ground of ascertained fact. Yet he nowhere meets the Leipsic theory as a theory, but only questions its norms; he sets its authors contemptuously aside, as if to have worked at Leipsic meant a biassed view of psychology in general; he charges "Wundt, Kuelpe," *et id genus omne* in the present instance with "a flagrant argumentum in circulo," and attributes to them an unscrupulous rejection of results which make against their *circulus*, —when some of these results are published by their own "people," and some even in their own organ! I have tried to write moderately in this and my previous paper, and have no wish to emulate Professor Baldwin in the matter of name-calling at the last moment. But I cannot think that his attitude to a long line of predecessors in the field is either scientifically or ethically defensible.

from the question as to how one or other state of things comes to be as it is in any one case." At the same time, I admit that the incomplete statement of the theory may account for its obscurity on this point, and shall await the complete presentation before offering further criticism. (5) I quoted Professor Cattell's letter, because he allowed me to publish it under his name. I did so altogether unhesitatingly, because Professor Cattell has taken part in the discussion of the validity of Lange's distinction (readers of the *Studien* will know how rigidly his adverse criticisms were 'suppressed' by Professor Wundt), and because every jot of direct evidence for or against the type theory was important to me. When the 'exact figures' and their analysis are published Professor Cattell's cases will, undoubtedly, carry greater weight than they can in outline form. The same is true of Professor Baldwin's cases: I fear that those mean variations which "are too complex to be of any value" will still be asked for by the cataloguing psychologists. (6) M. Inaudi's case tells heavily against the type theory, as published, for the reasons given on p. 513 of my earlier paper.

E. B. TITCHENER.

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THE PHILOSOPHY OF COMMON SENSE.

PROFESSOR SIDGWICK'S address, published in the last April number of *Mind*, I trust may be taken as yet one more, added to the indications that are already becoming pretty numerous, that the reign of Paradox in philosophy, and of the fallacy that, in that sphere, is synonymous with it[1] is drawing to its close. There are one or two aspects of the questions discussed, however, which strike me in a different light from that in which they struck Professor Sidgwick, and on them I should like to make a few remarks.

I think the claim to validity for the verdict of the plain man is susceptible of being stated more convincingly than we find it stated (p. 151). What is its position, we may ask, as regards the questions of physics? On one aspect of every such question presented, absolutely worthless, on another, quite as good as that of the profoundest philosopher alive. Nor does it matter in the smallest degree, how plain the man is, or how ignorant. I take a glass of clear lime water and a straw, and tell you that I am going to breathe through the straw into the water. Two questions at once arise:—"Will the water turn milky?" and "Why will it turn milky?" The answer to the last is within the sphere of the man of science only; the answer to the first is within the sphere of every man. If, moreover, the answer to the first were not within the sphere of every man, wholly irrespective of philosophical training, then neither answer could have any objective truth whatever.

The question then is:—Is there anything in subject science on which the verdict of the plain man is as good as the verdict of the philosopher, as it undoubtedly is on such a question of fact in physics as that cited? In other words, is there such a thing as fact in subject science? If there is not, this much is certain, that there can be no such reasoning there as the *reductio ad absurdum*, and, in that case, any one statement on any metaphysical, psychological, or ethical question would be just about as verifiable as any other. As psychological controversy, however, in one shape or another is one of the great facts of the world—whatever controversy is not physical being at bottom psychological—and as such controversy takes for granted the possibility of finality, that sceptical conclusion can hardly be the right one.

When we enquire, however, what is the equivalent of the appeal to physical fact in psychical science, the answer that comes uppermost is not satisfactory. We should be told probably that it was the appeal to consciousness, to introspection. An instance of this appeal made by Professor Sidgwick himself has been frequently quoted of late. In connection with the question of

[1] Cp. "In this sphere what *seems is*." F. H. Bradley, *Mind*, Vol. XIII. O. S. No. 49.

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the Freedom of the Will[1], "On the one hand," he says, "are all the arguments of Determinism, on the other my consciousness of deliberate choice at the moment of action." The appeal thus put, is looked upon in some quarters, and not without justification, as little better than giving away the Libertarian position. If however we enquire more narrowly what the appeal to consciousness, in such a case, really means, the question shews itself in another light altogether. Consciousness, in the sense of direct perception of the mental present, does not exist. Our knowledge of our states of mind is manifestly only the knowledge of past states. Is then the appeal an appeal to memory? In a sense, it can be nothing else. Memory, however, is always the memory of individual facts, not of abstractions. The mental process that we call the appeal to consciousness thus necessarily consists in recalling some individual fact and comparing it with some general proposition which is alleged to be applicable to it; of recalling an example, in fact, and comparing it with an alleged rule, in order, thereby, to test the validity of the rule. The abstract proposition in this case is:—"The Will is free." I may test it, perhaps, by recalling what happened this morning. I say to myself:—I had to decide this morning whether I should go to the meet of the Rangitikei Hunt or stop at home and write this paper. I decided on the latter course. I compare this series of mental events with the abstract proposition "The Will is free" and decide that it is an instance that comes under such a proposition; that it is something which would be described in the languages of all civilized nations as an act of free choice, or by some words into which these words are translatable. I am thus forced to decide that the proposition "The Will is free" is valid; that it is a fact with which every theory must be made to square. In what other way, indeed, do we decide that two straight lines cannot enclose a space? We compare the concept of straight line with the concept of lines that enclose a space, by calling up individual instances of each, and scrutinizing them side by side. If we ask, however, what is the concept of a straight line, we find that it is nothing whatever but the meaning of the words "straight line." All physical science even must thus, in the long run, rest on the postulate that elementary words must always be used in their natural meaning.

It may be objected:—this makes the questions of philosophy into questions of words. A misconception, however, very readily creeps in here. There is all the difference in the world between a question of language and a question of nomenclature. The "occasional meanings" of words are themselves a natural phenomenon, an evolutionary product; and the task of ascertaining the natural laws that give the rationale of these meanings and explain the connection between them must be the task of some science. Let any one set himself to endeavour to find a hypothesis

[1] I quote from memory.

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that will give the rationale of the distinction between wit and humour, and he will find himself engaged on one of the problems of empirical psychology. Let him endeavour to explain and account for the various meanings of Reality, Identity, or Causation, and he will be, at once, deep in the problems of Metaphysics. It seems then that the real task of the subject sciences is to explain and account for the meanings of such words, and that the meanings themselves are our data, which it is altogether illegitimate for us to twist or turn in any way.

A very broad distinction between the fact of physics and the fact of psychology presents itself in this, that the subject of an assertion in physics can be pointed out. We can point to wood, or lead, or water, and having thus fixed their identity as between man and man, we can add what predicates we please. When we ask, however, what is it that fixes the identity, as between man and man, of the subject in a psychological assertion, we see that it plainly is not anything analogous to pointing out. A table got its name for us originally because it could be pointed out, and its pointing out could be accompanied by an oral sign. Fear or hope, wit or humour, were never pointed out. They got names which are transmissible because the same series of occurrences gave rise to the same feelings simultaneously in different people. Hence what is analogous in psychology to pointing out in physics is reproducing an instance of such a series of occurrences as that to which the name originally attached and to which it still naturally attaches; adducing, in fact, a test instance for a general statement. In psychology, as Mr Stout says, it is the oral sign that "objectifies" the idea[1].

From this it follows that technical nomenclature and technical meanings have no place in psychology. We have absolutely no means of affixing them to its phenomena. For the naming of what is physically indicatable one pointing out is enough. The name can be, at once, affixed. What is not thus indicatable can only obtain a name as the result of many, perhaps of innumerable, repetitions; and of the seizure by the thought of the community of the common element in such repetitions. The name of every psychological phenomenon, in fact, registers the discovery of a law of nature as truly as the word "Gravitation" registers Newton's great generalization. It thus becomes comprehensible how, by diving into the meanings of words, important and valuable truth is to be elicited. What we are really diving into is the stored up experience of the race. It is after all no more mysterious that Common Sense should have the truth, though implicitly only, on the questions of metaphysics, than that we should be able to play tunes without knowing the theory of music, or to write verses without knowing the rules of prosody. All through life and nature we see the same precedence of the fact to its rationale, of crude analogy to

[1] "Thought and Language." *Mind*, O. S. Vol. XVI. No. 62, p. 188.

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quantitative proportion, of the instinct to the comprehension of its final cause. This is the essential truth expressed in the Hegelian triad, not derived, as Hegel himself imagined, from any *a priori* source, but, like the conception of causation or of reality, an unconscious or semi-conscious generalization from primitive experience. It is not hard to see, in the history of Idealism itself, an example of its operation. Starting from the standpoint of Common Sense we have, in the solipsism of Hume and Kant, the "anders seyn," and in the substitution of the *neutrum* for the Ego by Schelling and Hegel, a return, in so far, to the original conception, modified and enlightened, no doubt, by the controversy[1]. Pantheism, whatever it is, is, at any rate, no idle paradox, but the natural faith of a large portion of the human race; and is, in some sense, hardly distinguishable from the Christian doctrines of the omniscience, omnipotence and omnipresence of God. Undoubtedly the other world-famous paradox of Determinism has also only to run its course to come back, in the end, to theoretical conformity with our inevitable and instinctive thought.

[1] A Berkleian like Ferrier might with some justice contend that that clear-sighted philosopher had himself passed through all three stages.

WILLIAM W. CARLILE.

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VI.—CRITICAL NOTICES.

Geschichte der neueren Philosophie—eine Darstellung der Geschichte der Philosophie von dem Ende der Renaissance bis zu unseren Tagen. Von Dr HARALD HÖFFDING, Professor an der Universität in Kopenhagen. Erster Band. Leipzig: O. R. Reisland, 1895. London: Williams and Norgate. Pp. xv, 587.

THREE features, says Höffding, distinguish this *History* from its predecessors: first, the greater attention paid to each philosopher's personality and relationship to science and culture; secondly, the special consideration bestowed on the *form* in which problems were raised as distinct from their attempted *solutions*; and, thirdly, the superior adequacy of the work, due to fresh study of original sources of knowledge, as well as to the aid derived from the philosophic literature of the last twenty years.

Höffding is an appreciative and interested student of all systems, but to none—at least of those contained in the present volume—has he given his allegiance. One feels, however, that his interest in the history of philosophy is no mere literary or biographical interest. In formulating the results of his study his purpose has evidently been not only to gratify legitimate curiosity about the past, but also to assist in directing the future, of speculation. His style is lucid and objective; his method, that of faithful exposition, followed by independent criticism. His manner has a 'positivist' tone, which is always satisfactory when, as in his case, associated with a true sense of the problems underlying the superficial ground of positivism. He may be said to exhibit in himself much of what is best in the character of English speculation, combined with the critical idealism of Germany. In an article contributed by him to the *Archiv für Geschichte der Philosophie* 1888 (Band II., Heft i.), he concludes by saying:—"Despite all our criticism and all our realism, we must grant that the ultimate presupposition of philosophy is to be found in the fundamental thought of idealism; though we may not express this thought with the dogmatism of our predecessors, and cannot entertain their high hopes of carrying it out with scientific completeness." At the close of his *Psychology* he uses words to the same effect.

His History represents the progress of modern thought as a development. Lines of affiliation and influence are carefully traced.

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The main problems are distinguished and kept in clear relief; while the forms which express them are seen to grow ever more precise and more comprehensive, as philosophy better understands itself in successive generations. To Höffding himself the ultimate fate of philosophy seems to rest with psychology, yet this opinion has not (except perhaps in one or two cases referred to further on) had the effect of disturbing his balanced judgment as a critical historian. In his *Psychology* he asserts that all thinking—that of philosophy, including *Erkenntnistheorie*, among the rest—is object-matter of psychological investigation. In the introduction to the present work he goes further, stating that, if we should be ultimately forced to give up the other great problems of philosophy as insoluble, or as having arisen from misunderstanding, psychology would still remain, the last stronghold of philosophy. If he claims superiority for his favourite theme on the ground that philosophic thought is an object of psychological study, his claim must be resisted by those who reflect that psychological thought, too, is object-matter of psychology, but that this would not justify us in burdening the latter with the problems of its own existence, and of the validity of its reasonings.

Höffding, in tracing the movement which led to the Renaissance, begins with what he calls the 'Discovery of Man'—the 'Humanismus' of the age of Machiavelli and Pomponazzi, in contrast with preceding times when individual thinking and action were helpless in a church-dominated state, which looked for the fulfilment of its highest ends in a future world. He shows—as others have often shown—how a feeling for the importance of humanity as such grew stronger and stronger. He traces the growth of theories of natural right and natural religion, both being a protest against, or a revolt from, the supernatural. With changed views of man's position on earth came changed views of the earth's position in the cosmic system. The mediæval astronomy and science gradually fell into discredit, and ultimately disappeared, before the assaults of renascent speculation. Natural law—it began to be whispered—extends to and involves the very heavens! The old opposition of heaven and earth, the abodes of God and men respectively, was abolished. A bounded universe was no longer adequate to the needs of cosmical conception. Space was declared to be infinite. The universe might still be a sphere, but—it was 'a sphere whose centre is everywhere, its circumference, nowhere.' Popular religion had ever been closely associated with popular astronomy. Even now ignorant or unreflecting persons all round the world regard each his own church-spire as pointing heavenwards. Such crude notions received a severe shock from the new astronomy, when it was seen that the relationship of God to the world must be conceived far differently from the way in which it is conceived by children. With the revival of letters attention was redirected to the original writings of the Greek philosophers, especially Aristotle. It was found that his genuine work had been overlaid with a mass of constructive interpretation by which it was almost concealed. The question on which his

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votaries consulted him most anxiously was that of immortality. St. Thomas had been able to derive from him clear statements, or cogent arguments, in favour of the doctrine nearest to the heart of Christianity. But in the *De Anima*, when read calmly and without bias, no such clear statements or cogent arguments could be found. On the contrary, the doctrine therein maintained, that soul is the 'form' of body, while 'form' and 'matter' are incapable of existing asunder, was felt to be distinctly unfavourable to the doctrine of a future life. True, Aristotle in various passages asserts, or implies, the survival, after death, of a certain part or aspect of soul. But he expressly says that *memory* and *will*, which, for ordinary persons give life its interest and worth, must perish with the body. Aristotle's Psychology had, indeed, been very differently interpreted by different classes of commentators. As Höffding says, the Greek scholiasts construed its meaning *naturalistically*; the Arabians (Averroes &c.) *pantheistically*; while the scholastics, particularly St Thomas, had derived from it a theory of *dualism*—of soul and body as distinct and *independent* entities. Thus free speculation re-opened the momentous question which Christian dogma had closed, and the resulting investigations paved the way for modern psychology.

Naturalism, the most signal feature in the character of Hellenic life and thought, was revived with the renewed study of Hellenic literature. Its growing influence is traced by Höffding in connection with the names of Montaigne, Ludovicus Vives (who first strove to divert attention from the fruitless question as to what the soul *is*, to the fruitful question, what the soul *does*), Jacob Böhme, Grotius, and Herbert of Cherbury. The first book of this history concludes with an elaborate account of the life, personality, and work, of Giordano Bruno, who is, for Höffding, the first great figure—almost as great as any—in the history of modern philosophy.

Höffding next describes the way in which the progress of new ideas gradually revolutionised physical science—or, rather, introduced it. With this subject his deeply interesting second book is occupied. A new problem had arisen: to determine the forces and laws by which the system of nature, constructed by thought out of the data of perception, is regulated. The motions of the celestial bodies had for centuries been referred to the agency of souls. That stars and planets had souls, or were souls, dwelling apart, was then no mere poet's fancy. It filled the place of scientific belief. This belief lasted until the time of Kepler, who himself entertained it at first. In the second edition of his *Mysterium Cosmographicum*, says Höffding, he informs his readers, that the *animae motrices*, which he had mentioned in his first edition, have no existence. "I once thought that the forces which moved the planets were souls; but, when I considered how these forces decrease with distance, I concluded that they are corporeal." Archimedes had conceived the germinal idea of exact science, but his works remained, throughout the Middle Ages, unedited and unknown. His thought had slum-

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bered, but it was not dead. In the 16th century, when edited and translated, he became known as the founder of statics and hydrostatics. Experiment and analysis were now gradually substituted for contemplation and reflection. The doctrine of the Four Elements was abandoned. The form of objects was less thought of than their matter and its changes. Attempts to discover the laws of these changes were zealously prosecuted. Knowledge of laws had, as was easily seen, the advantage of enabling men to predict the course of events, and with the power of prediction is linked, to some extent, the power of control. Thus the practical reinforced the theoretic interest of modern science. Höffding sketches the progress of these ideas from Leonardo da Vinci to Galilei. With the establishment of Kepler's Laws the old animistic explanation of celestial motions had for ever lost its credibility. The mechanical explanation took its place. But, besides this, both Kepler and Galilei taught that arithmetical and geometrical relations pervade all nature. The watchword of one might have been the watchword of both: '*ubi materia, ibi geometria.*' All real things have their numerical and geometrical relations, even when, from the imperfection of our calculus, we cannot ascertain or express those relations. By his maxim—'measure everything, directly or indirectly,' Galilei laid the foundation of modern exact science.

The influence of the new astronomy and science upon philosophy is well described by Höffding in connection with the names of Copernicus, Bruno, and Galilei. The imperfectness of sense-perception as an organ of science had been proved when the geocentric astronomy was refuted. Revision of the basis of empirical knowledge was needed and demanded. The conception of the relativity of motion had profoundly impressed all speculative minds. Alterations in the celestial phenomena, long believed to be absolute, were, after all, relative to the place of the observer. "Suppose the earth away," said Bruno, "there would be no sunrise or sunset, no day or night, no horizon, no meridian." But, if celestial changes are thus relative, why may not alterations in terrestrial things likewise be relative? Changes in the sensible qualities of material objects might be but a re-arrangement of their minute particles, relatively to one another and to us. Thus the conception of the subjectivity of these sensible qualities was introduced. Galilei, indeed, asserted that none of them actually exist in bodies. The actual qualities of body are, he said, figure, magnitude, motion and rest. All others, without sentient and perceiving beings, have no existence.

After the period of new ideas and discoveries came that of efforts at philosophic reconstruction. Great questions called for new solutions. What is the relation between Soul and Body? What is the relation between God and the World? Is Substance *many* or *one*? What is the real significance of the conception of Purpose? Descartes saw the need of a new system of philosophy. He believed that one man could frame it better than many, and that he was himself the one man. His originality in philosophy, as distinct from science, is far

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less than has often been supposed. The fundamental position of his constructive thinking—*cogito ergo sum*—had been taken up by many preceding writers, from St Augustine to Campanella. But he is unwilling to admit this. His reluctance to acknowledge his indebtedness to predecessors is a disagreeable trait in his character. It almost seems as if the profound and far-reaching scepticism, which, as Höffding says, he surmounted with such remarkable rapidity and success, was, at least partly, an artful device by which he procured the satisfaction of clearing off, at one *coup*, his unacknowledged debts.

Höffding gives an excellent critical exposition of the cardinal points in the philosophy of Descartes. In one passage, however, he seems to treat the latter with something of unfairness. The greatest service rendered by Descartes to philosophy was, he thinks, that, by carrying out in an extreme form the doctrine of psychological dualism which he had received from his predecessors, he brought its difficulties into a strong and clear light, and thus enabled his successors to advance beyond that doctrine. Höffding, in fact, criticises Descartes from his own monistic standpoint. What Höffding's monism means the following quotation from his *Psychology* (Ch. II. 8 d Engl. Tr. p. 64) will show: "Both the *parallelism* and the *proportionality* between the activity of consciousness and cerebral activity point to an *identity* at bottom. The difference which remains, in spite of the points of agreement, compels us to suppose that one and the same principle has found its expression in a double form. We have no right to take mind and body for two beings or substances in reciprocal interaction. We are, on the contrary, impelled to conceive *the material interaction* between the element composing the brain and nervous system *as an outer form of the inner ideal unity of consciousness*. What we in our inner experience become conscious of as thought, feeling, and resolution, is thus represented in the material world by certain material processes in the brain which, as such, are subject to the law of the persistence of energy, though this law cannot be applied to the relation between the cerebral and conscious processes. It is as though the same thing were said in two languages."

This he calls the statement of an empirical formula sufficient for the purposes of psychology. But it comes perilously near trenching on the province of *Erkenntnistheorie*, especially when, a little further on, he says (p. 67):—"Mind and matter appear to us an irreducible duality, just as subject and object." He himself distinguishes clearly in other places between *Erkenntnistheorie* and *Psychophysik*. For example, in the present volume, pp. 347—8, when criticising Spinoza, he writes to the following effect:—"Spinoza has confounded the relation between mind and matter with that between knowledge and its object. Both mind and matter (existence on its mental, as well as on its material, side) are objects of knowledge, and the *Erkenntnis* problem arises on all sides on which existence appears. *Erkenntnistheorie* has to consider and determine the relation of Knowledge to

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its object; *Psychophysik*, the relation of mind to matter. Spinoza's shifting from one of these points of view to the other arose from the fact that the problem of *Erkenntnistheorie* had not in his time received the distinct and independent recognition which it has since obtained. Not until a critical revision of our knowledge has been made, with reference to our capacity for knowing the mental and the material sides of existence, can the distinction between the above points of view emerge."

Now, it is not pretended that Descartes had completely grasped this distinction; had he done so, he would not have essayed to construct a positive theory of the relation between thought and extension as substances. Yet his *cogito*, and his manner of insisting on the first-personal standpoint, prove him to have chosen the conception of self in relation to the object as the true basis for a critical revision of knowledge. Thought and extension were terms which for him primarily represented the terms self and object. Therefore it is that he asserts so strenuously the impossibility of throwing light on their relation by any process of inductive observation. When Höffding (p. 261) contests this assertion, and urges that, on the contrary, induction and observation alone can supply a sound hypothesis to explain the relationship, he forgets for the moment that Descartes' point of view may not be identical with his own, and commits the logical impropriety of judging *Erkenntnistheorie* by the canon of *Psychophysik*. Höffding himself, as we have seen, teaches that the only relation on which *Psychophysik* can enlighten us is that of conscious processes to nervous processes. Here only may induction and observation be used with success. They cannot help us to understand the relation between the knower and the object of knowledge. On this relation none of the physical sciences can shed light. All of them are functions of its operation. Physical analogies serve for the interpretation or elucidation of physical facts, but to demand that they should explain, or contribute towards explaining, the possibility of knowledge is to demand too much. Clearly as Höffding seems to see this, he does not adhere to it consistently: and the criticism of Descartes, to which attention has been just drawn, seems to be an instance of such wavering.

Critical philosophy labours under the disadvantage, that its direct results are negative; that, accordingly, however important for the 'regulation' of science in general, it conduces to no particular scientific results. Physiological psychology, on the other hand, commends itself, as a department of positive science, to all who desire concrete conclusions. But psychologists, in the ardour of their own pursuit, too often either ignore the critical teaching of Kant, or else, while acknowledging it in their prefaces, feel themselves under no obligation to give it practical effect. Their prepossession in favour of a positive science is laudable; but they pay dearly for their neglect of criticism when, as now and again happens, they raise an edifice of theory on an illusory basis; as, for example, on that of mistaken or misapplied metaphors. The critical assault

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upon Descartes' theory of the 'two substances' is, doubtless, successful, yet not more so than it would be if directed against Höffding's theory of 'one and the same principle finding expression in a double form.' Neither the constructive dualism of the one, nor the constructive monism of the other, can be maintained, as a metaphysical doctrine: therefore (since they are, virtually, nothing but this) both should be abandoned.

The passage above quoted from Höffding's *Psychology* teems with metaphors. It refers to a 'parallelism' between the activity of consciousness and cerebral activity; treats the material processes as 'outer' forms of an 'inner' unity; and suggests that we may assume between them an identity 'at bottom.' The most favourable supposition respecting this paragraph is, that its author was, when he wrote, thinking solely from the psychophysical standpoint, and that he would steadily refrain from expressing himself similarly with regard to the subject of epistemology. But, even on this supposition, what, after all, is gained by the 'one principle' theory except a 'transfigured' animism? If not this, then a transfigured materialism, akin to Mr Herbert Spencer's doctrine of the 'Unknowable'; only that the agnostic admission is not made by Höffding with the delightful frankness of Mr Spencer. But the supposition cannot be granted without reserve. The tenor of the passage implies, despite protestations to the contrary, that the terms 'parallelism,' &c. may, with scarce the need of a palliative *mutatis mutandis*, be applied to determine, or describe, the relation of self to object. If so, it is important to observe that the whole burden of the meaning is, throughout this paragraph, cast upon the metaphors. Let us consider, for a moment, the validity of those metaphors by whose aid *Psychophysik* tries to supplant *Erkenntnistheorie*. When gas is turned into flame, that which, to perception, exhibits itself as light corresponds coinstantaneously with that which, to science, exhibits itself as an alteration taking place in the molecules of the gas. This correspondence, may, by a metaphor, be called a parallelism. Again, when a change in feeling, *e.g.* from pain to pleasure, takes place, a correspondence exists between the conscious states and their molecular conditions. This correspondence, also, may be denominated a parallelism. The 'parallels' in both instances may, likewise, be referred to as different 'sides,' 'aspects,' &c., of the same fact or process. The metaphors are as legitimate here, as they are, from the nature of the case, almost unavoidable. There can be no intrinsic objection to the employment, in reference to things and processes of the objective world, of modes of speaking borrowed from that world. Such are the expressions 'inner, outer' and others involving spatial relationship. Still, when these are applied for the purpose of explaining, in any useful sense, the connexion between conscious and nervous processes, they are already somewhat strained: more especially when, by a metaphorical dive into the third dimension, it is suggested that the 'parallels' may be united 'at bottom' in 'one principle.' Evidently science is here at its wits' end. But can

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further advance along the same line bring us to philosophy? Shall we go on, by the help of these metaphors, to explain, or try to conceive, self as 'inner,' its object as 'outer'? Not so, unless we are prepared to accept the notion, fit only for children and savages, that the thinking Self and the organism are one, or that the former 'resides' somewhere within the *pericranium*. This would be to cast criticism to the winds, or require it to begin all over again. When, in short, attempts are made, openly or covertly, by means of these metaphors, to render more comprehensible the relation of which all thinking whatever is a function, we cannot help saying to the authors of those attempts:—"Your theory is refuted by the very form in which it is expressed; it is a web of abused metaphor, whose flimsy texture one touch of criticism would destroy." Descartes' theory of the two interacting substances is, doubtless, weak, but Höffding's theory, of the 'one principle at bottom,' is scarcely stronger. No mere application of terms, however deft and dexterous, will ever enable us either to rise (with spiritualists), or to descend (with 'transfigured' animists or materialists), to a point from which the dualism of knowledge should, for us, merge itself in monism. In other words, we are but men, and cannot see ourselves and things *sub specie aeternitatis*.

Höffding's inclination towards this theory of 'parallelism' must, also, have suggested the following criticism of Leibniz (p. 399):—"If he had, instead of merely conceiving the corporeal in analogy with the spiritual, also at the same time conceived the spiritual in analogy with the corporeal, he would have seen the need of assuming that individual consciousnesses, despite their wondrous stamp of unity, stand in interaction with the remainder of existences, in virtue of the Law of Continuity which he strongly emphasises, but applies only to each individual monad, not to the inter-relationship of the monads." What our author suggests that Leibniz ought to have done is precisely what Leibniz' theory of 'apperception' rendered impossible. How could a writer influenced throughout, as Leibniz was, by the thought of the spontaneity of self-consciousness, have, consistently with this, 'conceived the spiritual in analogy with the corporeal'? That is to say, how could he have substituted the attitude of *Psychophysik* for that of *Erkenntnistheorie*? We may observe, however, that Professor Wundt has, in recent times, facilitated this substitution, by employing the word 'apperception' in a sense which accommodates it to the service of his favourite science. In a note (*Phys. Psych.* II. 236) he explains and defends his own employment of this characteristically Leibnitian term. Höffding's general tone of thought has been considerably influenced by Wundt.

His treatment of Spinoza is masterly, at once highly appreciative and thoroughly critical. No historian of philosophy has more completely penetrated the meaning of the 'central philosophic system of the 17th century,' read the secret of its development, and exposed its fundamental weakness. The incongruities between 'Spinoza the mystic' and 'Spinoza the psychologist' are here forcibly and clearly exhibited. With regard to Leibniz, Höffding is less sympathetic

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and, perhaps for that reason, less satisfactory. In some passages, *e.g.* in that already mentioned, he seems to treat Leibniz with injustice. He speaks of him (p. 372) as a reactionary against the doctrines of Spinoza, yet unconsciously influenced by Spinoza's fundamental thought. But, though there may be much truth in this, it is hardly fair to tax Leibniz as Höffding does (p. 396), with lack of intelligence or candour, for not seeing and acknowledging the essential connexion, in an important respect, between his own position and that from which his philosophy was, in spirit, a revolt. Leibniz, however, was not merely a reactionary. Further on (p. 400) he is described by our author as a pioneer of the independent speculation of the 18th century.

Höffding's article on Hobbes will be welcome to every student. The character and work of 'the greatest of the 17th century dogmatists' are unfolded and examined with unusual care and minuteness. Höffding possesses, in a high degree, the faculty of character-painting. The really great writers of whom he treats are made to stand before the reader as living men, not merely as the authors of certain theories. A good illustration of this appears in his treatment of Hobbes, "the first in that series of distinguished investigators in the sphere of psychology, who are the pride of English philosophy."

The fourth book in this volume is devoted to the 'English Empirical Philosophy,' to which our author ascribes no small importance. The 'classical English school,' beginning with Locke, chose for its problem the investigation of the development of human knowledge, and of the presupposition on which knowledge depends. Locke and his English successors created its distinct position for the *Erkenntnisproblem*, which, in the great dogmatic systems, had been overshadowed by the *Existenzproblem*. Dogmatism is the procedure which, without examining the conditions and limitations of knowledge, employs our conceptions to explain existence. Criticism investigates the faculty of knowledge before beginning to speculate on existence. The latter commenced definitely with John Locke, however far Locke himself was from comprehending fully the meaning and genuine method of criticism. Höffding informs us that Locke borrowed his use of the terms 'primary' and 'secondary' qualities of body from Robert Boyle, but that the doctrine which distinguishes them, though often attributed to Locke as its founder, really began with Galilei. The latter part of the assertion is scarcely accurate. The doctrine referred to appears first, in the history of Philosophy, with the Atomists, Leucippus and Democritus. They first, as far as is known, distinguished between 'actual' qualities and such as are only 'affections of our sensibility.' The 'actual qualities' of Galilei were included in those of the Atomists, motion, figure, magnitude. Locke's list of 'primary qualities' coincides more nearly with Aristotle's list of 'common sensibles,' in which 'number' is added to the above three qualities[1]. Höffding is, in general, disposed to

[1] The Atomists added *διαθιγή* and *τροπή*, explained by Aristotle as = *τάξις* and *θέσις*, or 'order' and 'position.' *Vide* Diels, *Doxographi Graeci*, p. 484; Aristotle, *De Anima*, II. 6, 418ᵃ, 17; *Met.* I. 4, 985ᵇ, 17.

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think, or lead his readers to think, that nearly all the ruling ideas of modern philosophy originated in modern times. On the contrary, while the cardinal methods and aims of science are nearly all modern, those of philosophy are, for the most part, to be found in the ancient Hellenic systems. Among the chief exceptions to this are:—(*a*) the peculiar forms given by Christianity to the Platonic dualism; (*b*) the Leibnitian theory of monads, as centres of spiritual energy; (*c*) the *Erkenntnistheorie*, or the critical study of the faculty of knowledge, in the form which it owes to Kant. This subject is one which should, if space permitted, receive further illustration here.

We notice, with some pleasure, that Höffding has an article on Butler, though this feeling is changed on discovering that the argument of the *Analogy* (described as *eine merkwürdige Schrift*) is, as usual, misconstrued. Whoever will read Höffding's observations (p. 499) on this work, and then those of Mr Leslie Stephen (*An Agnostic's Apology* &c. p. 34), will, on comparing both, have some ground for conjecturing the source whence the former derived their inspiration. The ground of conjecture will be strengthened when the reader finds Höffding, a few pages further on, referring to Mr Leslie Stephen's *History of English Thought in the 18th Century*. Mr Leslie Stephen, like Höffding here, calls attention to grave difficulties in Butler's argument: but it seems disingenuous to do this in such a way as to leave the impression that Butler himself was not fully alive to these difficulties, or had made no effort to grapple with them. The fact is that, in the *Analogy* (pt. II. ch. viii. *ad init.*) will be found a statement of the principal points urged against him by Höffding and Mr Leslie Stephen—a statement at least as strong and clear as any ever made by his ablest and most hostile critics. The agreement here noticed between Höffding and Mr Leslie Stephen may of course be a mere coincidence. But if our author relies for knowledge of Butler on the rapid and brilliant critic who has in recent times most persistently assailed him, it may be observed that a genuine historic sense might easily have suggested a better course. After all, for the historian's purpose, the best expositor is, to the original whom he expounds, what moonlight is to sunlight. But when the expositor happens to be also the antagonist of his original, to depend on him for information is, indeed, to guide oneself by a *lux maligna*.

The volume before us ends with an account of the French 'Illumination,' and of Rousseau, the only really great figure, during the 18th century, in the history of French speculation. It is to be hoped that no reader of *Mind* will regard anything above said as intended to disparage the general character of Höffding's *History*. This will, indeed, be a valuable and much needed addition to our libraries, and one for which sincere gratitude is due to its author.

JOHN I. BEARE.

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Studies of Childhood. By JAMES SULLY, M.A., LL.D., Grote Professor of Philosophy of Mind and Logic, University College, London. London and New York: Longmans, Green & Co., 1895. Pp. viii. 527.

IT has been said that it is only during the decadence of Art that childhood is represented. The Greek, we are told, dealt only with the perfected, the complete human being. The child, being immature, was but rarely introduced, and only came to be considered as Art declined. If this be so, some may hold that the earnestness with which we moderns regard and study child life, is but one amongst the many signs of degeneracy to which Professor Max Nordau calls our attention. But our age is an age of science rather than of art, so let us hope that we may give a hearty welcome to the first careful attempt that has been made in England to study childhood on a large scale, without fear that by so doing we "delight in imperfection" and class ourselves amongst the degenerates of our generation.

Professor Sully's new book, "Studies of Childhood," conveys its purpose by its title. It is, as he carefully warns us, simply an attempt to "deal with certain aspects of children's minds which happen to have come under his notice." Hence we must not look for a systematic treatise, or a book written for the psychologist, but rather judge the work from the standpoint of its truth to nature, and its power to rouse interest amongst those most likely to be useful in the new close observation of children, *i.e.* Parents and Teachers.

Undoubtedly there are serious drawbacks to the method of treatment. The want of definite plan makes the book extremely difficult to grasp, and hence very hard to review. We rise from its perusal with a conviction that there is plenty of material here; a number of interesting facts; charming child stories, often most skilfully interpreted; but what we are to learn from it is apt to elude us. What we have to try to get at is how these studies are to help us in the future, and what light they throw on the many problems of childhood.

Professor Sully's work is distinctly that of a pioneer. He points out clearly to us the direction in which we are to work, showing us the particular characteristics of childhood about which further observation is required, *e.g.* the baby's colour sense, a far more difficult matter to observe than most people suppose. Again, observers are urged to collect spontaneous utterances of children; to note how far imagination in one direction coexists with imagination in other directions; evidence concerning children's dreams is asked for; their power of making into actual things, darkness, wind, shadows; their disregard of limbs as a part of self; the exact date at which the pronoun 'I' is correctly used; and the extremely interesting point as to the effect on the child's ideas of things, brought about by learning two languages very early in life.

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It may be doubted whether "Studies of *Gifted* Childhood," would not be a more appropriate title for the book before us. The little boy who pretended to paint the furniture with the end of a rope; the boy of two and a half who fought battles with imaginary soldiers; the boy a little over two, who suggested that a "yump of sugar would make a bumble bee (have) heat spots"; the child of two-and-a-half who told a little story about three bears, who found a stick and poked the fire with it; Lyle, who told his father that he could not eat his crusts after the fashion of his progenitor, because "God has made you and me different"; the little two-and-a-half-year-old artist, who drew Fig. 19, p. 349;—were surely all of them gifted children. But it may be that this view is due to the lack of opportunity of observation of many children, though parents seem inclined to agree with it.

It would seem that boys are far cleverer than girls, from Professor Sully's collection of stories, or is it that parents are wont to pay more attention to the sayings and doings of their sons than of their daughters? I suspect that this is the true state of the case.

In regard to Imagination; some observers of children may be inclined to dissent from some of Professor Sully's conclusions. He tells us a tale of a little child who attributed intelligence even to stones, and who used to think the pebbles must be dull for want of change, and to carry them in her basket to another spot that they might get a different view. This Professor Sully thinks a proof of considerable imaginative power, and a quaint expression of sympathy with the insentient world. But is not this an imagination of a lower order, in which the child could not soar beyond the attribution of its own experiences to the inanimate world? The child, it seems to me, has taken a higher flight of imagination when he is able to picture stones and trees as living a distinctly different life of their own, and it is imagination of this kind which will lead the child to develop into the sympathetic comrade who can "put himself into his neighbour's shoes," and rejoice in a joy different in many ways to that he has himself experienced. We might expect the child of the pebbles to grow up capable of sympathy with pains or joys experienced by herself, but not with joy and pain unknown to her, unless a further development of imaginative power took place.

Again, Professor Sully attributes children's jealous exactness as to accuracy in repetition to the child's perfect gift of visual detailed realization. No doubt the upset of the mental picture is one great cause of the child's eager insistance on exact repetition, but this does not seem a sufficient explanation. The little boy of three who was terribly distressed because his grandmother, when reading a story, said she was ill of scarlet fever, protested, "Oh no, Grannie she *didn't* have scarlet fever. When mother reads it to me, she is ill but she *hasn't* scarlet fever," could scarcely have suffered from a shock to visualization, and his whole attitude was that of righteous indignation because his worthy

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grandparent had failed in truthfulness. The child's extreme love of truth and accuracy seems to be a factor in this characteristic, and also, it may be, another childish feature, which Professor Sully scarcely seems to dwell upon enough, *i.e.* the child's extreme conservatism. To the child, what has been, must be. It hurts his sense of propriety to suffer change, and this often happens when the change is clearly for the better. In a class of infants, in a Poor Law School, it was a long time before the new introduction of the Kinder Garten system of teaching appealed to them. They preferred the dullest counting by rote to the manipulation of the most tempting yellow shells; the dry repetition of words, to the examination of the brightest picture.

Our author's delightful sympathy with individual child-life is manifest throughout this chapter, as indeed it is throughout the whole book, and he throws much light on the vividness with which children throw themselves into fictitious characters, as, for example, when the mother kissed the little girl of four who was playing at shop with a younger sister, she broke into piteous sobs and at last sobbed out, "Mother you never kiss the man in the shop." Also the way in which the child attributes life to inanimate objects, as when Lyle said of his wooden horse, "Dobbin is tin (skin) and bone. No tarpenter made Dobbin. Dod made Dobbin."

On the whole this chapter scarcely deserves the title of the age of imagination, but rather the age of make-belief: for imagination in its highest development belongs, as Professor Sully himself shows in "The Human Mind," to the most advanced stage of human culture.

In the particularly interesting chapter on the products of childish thought, it seems as if Professor Sully scarcely made allowance enough for the constant instruction which the child receives at the hands of grown-up people. He draws our attention to this fact in regard to the child's ideas of birth and death, but looks upon the child's tendency to regard all that takes place as designed for us poor mortals as a natural anthropocentric tendency, shared alike by child and savage. Surely the careful instruction of grown-up folk plays some part here. First we have the ignorant nurse and mother teaching the child that "the naughty table" made him fall, and "the kind sun has come out just in time for his walk." Later he learns, "Thank you pretty cow that made Pleasant milk to soak my bread"—a verse which has much to be responsible for. And the extreme teaching of purpose and design in every detail of animal life, so often given in the Kinder Garten, helps the child, who so closely identifies himself with all living creatures, to accept the view that all is made and done for him. Later on this view is greatly strengthened when stuffed birds and squirrels are procured for his lessons and museums,—shot for him, he thinks, in order that he may see and learn.

The treatment of the development of the idea of God is very slight. There is surely far more to be said on this matter, especially in regard to those children who have had little direct theological teaching.

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I am very doubtful whether Professor Sully's hypothesis, that the child's first words really imply sentences, will bear the light of closer investigation, though he has the support of Preyer, and I believe, Romanes. According to our author "Down" means a complete sentence, either "The spoon has tumbled down," or "Lift me down." Professor Lloyd Morgan holds that the word "down" is "simply a definite sound that the child has learnt to associate with a particular piece of sense experience." He knows that when he utters the sound "down" he will have the experience of passing through space from chair to floor; and when the spoon falls, he expresses this fact also by the sound "down" because the sound is connected with more than one kind of sense experience. It is not, he maintains, until the child begins to perceive relations that he uses sentences, which are not therefore merely fuller expressions of ideas already held, but expressions of a new order of ideas.

There are several points in which Professor Sully seems to have broken quite new ground. The idea of gradual diminution in size, which some children seem to expect will happen to grown-up people, is quite new to me, though the idea so common to many little girls, that they will by and by become boys, is not dwelt upon. Again, his view that children reify the dark, and regard it as a kind of monster whose eyes are represented by the slightly luminous spots, throws quite a flood of light upon some of the horrors of childhood, and seems to call up dim remembrances of the long buried past. The whole treatment of fear is most useful, and it is well that so much prominence should be given to a feeling that is one of the most marked in early childhood, and to which the attention of parents cannot be too earnestly called, as the fears of childhood have such a marked effect on character; and it is for this reason that it is impossible not to regret that Professor Sully has not dwelt more on those religious fears which form so large a part of the intense sufferings of childhood. The sermons on the great white throne delivered by some emphatic but thoughtless curate, the account of the last day and the sound of the trumpet, have done more to make the young life a perpetual terror than many adults can realize. Children's lies too are so carefully accounted for that the parent trembling for his child's future may surely take courage, and trust to time and fact to cure the romancing propensities of little ones. Let us hope that Professor Sully's exposition on this point will do something to save small folks from the "sound whippings" that are deemed salutary for supposed deceit.

The development of the child's artistic powers, or rather of his intense desire to express himself, deserves a far larger notice than space will allow. It is pleasant to find so strong a plea for children's natural truthfulness, and I am reminded by p. 264 of a whole family of children who each in turn played with a toy-market, and at the ages of three and four always made the supposed thieves reply

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to the policeman's "You bad man, what have you done?" "I've stolen a potato," etc. Later in life, as the children's imitative powers grew, the fictitious characters lied boldly and suffered double punishment.

Professor Sully takes perhaps a somewhat optimistic view of childhood. He looks upon it as a region undisturbed by the stir and stress of our introspective, and in some respects worldly minded, nineteenth century. He appreciates to the full the woes and sorrows of child life, as is shown over and over again, especially in the touching story of little C's cry of pain, "You don't understand me," but he thinks the child-world free from modern taint. Is this so? Has not Professor Sully been in some strange way saved from such stories as the following, for the truth of which I can vouch? "Don't be so silly, K," said a parent to his ten-year-old daughter. "I can't help it, Father," was the prompt reply, "I've inherited it from Mother." A small child of four, who was about to be photographed in a Kinder Garten group, remarked with a world-worn air, "I'm perfectly sick of being photographed": and another girl, older by some seven summers, observed that she felt as if nothing were left to be done by way of amusement. But what could be expected when the same child was allowed to keep awake, after her evening prayers had been said, to see the patterns for her new dress that came by the last post? Has not modern life, from Nordau's point of view, crept in here with a vengeance? If we would keep childhood as sacred and undisturbed an abode as Professor Sully pictures it, we must be careful how we extend our scientific observations in that direction. We cannot do better than follow the admirable example given us in "Extracts from a Father's Diary," where little C is watched with such unobtrusive observation through the opening years of his life, and has grown up to boyhood absolutely unaware that he had been the subject of such watchful care.

There is a great danger lest, in our eagerness for discovery, we should ply the child too closely with questions. As Professor Sully says, the child who knows he is observed will soon begin to act for effect, and we may add that his answers to questions will not be absolutely true accounts of his inner state. Take for instance Mr Stanley Hall's paper on Fear, in which the child is asked to state what he is afraid of. To the child fear is cowardly, and it does not cross his mind that not to admit fear is untruthful. Those of us who were supposed by our parents to have no fear of the dark would have died rather than confess on paper that we went trembling up to bed; that the clang of the back door made us race along the dark passage and up the wooden staircase, with a conviction that all the bogies that haunted the house were behind us!

Even such a question as this put to children, "What do you think are the differences between a child and grown-up people?" is a very doubtful one. It at once places the child in a critical attitude towards his elders. Either he crystallizes the bad opinions

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he entertains of injustice and unkindness, or is led to give an inaccurate or untruthful account which he thinks will win him favour. The true way to get at knowledge of child-life is to have a child-friend whose confidences are very close, who tells us truly what he feels and thinks as he sits on our knee, and who brings to us his childish troubles as C. brings his to his parents. The boy of about eight who eagerly took up the idea of his brother and himself changing places with his aunt and her friend, and with a deliciously ironical air said, "And then I know what we'll do. We'll take you both to the quay and then, just as you are enjoying yourselves, we shall say, 'Don't go near the edge, you'll *fall in'!*" revealed one of the keenest troubles of boy-life in a way that would never have been expressed on paper.

To gain a true knowledge we must be content to work very slowly; to cultivate in ourselves keen powers of observation; and to accumulate as many extracts from a father's, mother's or teacher's diary, after the pattern before us, as possible. The great lesson taught to all parents and teachers is that, unless they are on intimate terms with little ones, very slight advance will be made in Child-Study. "Children are frank only before the eye of love." But in combination with the moral excellencies, needed for an adequate treatment of children's questions and difficulties, there must be also a scientific mind.

Intellectual as well as moral insight is needed, and those will prove the best observers who are fully conscious of their own infirmities and the difficulties of their task, and who bring to bear upon it an inexhaustible patience and a determination to put aside all prejudice, and preconceived notions. First observation, then hypothesis, lastly verification, and this process over and over again repeated, will be our only chance of solving the enigma of child-life.

The chapter on the child as draughtsman is perhaps the most original in the book, and opens up a delightful field for research.

ALICE WOODS.

Evolution in Art: as illustrated by the Life-history of Designs. By ALFRED C. HADDON, Professor of Zoology, Royal College of Science, Dublin. London: Walter Scott, 1895. Pp. xviii, 354.

PROFESSOR Haddon is one of a growing number of men who are intent on tracing backwards the metamorphoses of ornament, in order that they may disclose its cause, its origin and its meaning, and because they regard the subject as an essential part of the larger question of the evolution of art.

It is an interesting fact that of this band of students those who have been most successful in their search have been biologists. But Professor Haddon is too modest when he declares that he is "neither an artist nor an art-critic, but simply a biologist who has had his

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attention turned to the subject of decorative art." In this confession he has laid himself open to the thrust of the predatory reviewer, who has not hesitated to reply that "art cannot expect much at the hands of science" (*Manchester Guardian*).

Perhaps science cannot expect much from those who are artists only, or art-critics by profession. For in truth the lore of ornament and of art has already become a science and, like that of organic evolution, requires the patience and the acuteness of a Darwin. Certainly none but a man trained in embryology could have satisfactorily followed the transformations of the "arrow-ornament," found in Torres Straits (p. 22), which originated in a realistic representation of a crocodile, and passed through successive changes, with displaced nostrils, eyes elongated into a panel, limbs lost, and cloacal plate permanently decorated, until a design was evolved that seems purely geometrical. And none but a zoologist could so well have written one of the most interesting chapters of this book, on the application of biological deductions to designs, in which Professor Haddon maintains, though he hardly proves, that the genesis, growth, and decay of any artistic *motif* are subject to the same laws that govern the evolution of living organisms.

In all scientific treatises two things are needful, definitions and a nomenclature. No one can define the meaning of words better than Professor Haddon, yet from the present work preliminary definition is almost absent. The important word "ornament" is not defined. It is only on the 314th page that we are told that "in patterns the two essential elements are symmetry and repetition," and we are nowhere reminded of the marvellous results of serial arrangement, nor of the fact that symmetry itself is a form of repetition. He assumes too much knowledge on the part of the general reader. On the other hand his nomenclature is welcome and satisfactory. Its need has long been felt. He divides "patterns" into skeuomorphs and biomorphs, and the latter into phyllomorphs and zoomorphs, of which the anthropomorph is a branch; whilst he adds the term physicomorph to denote a design founded upon a process or a phenomenon (p. 118).

A skeuomorph is an embellishment demonstrably derived from some utilitarian structural artifice; and the "rope pattern" is a good example of one. A zigzag may be a skeuomorph. In some particular case, as on bronze celts for example, it represents a ligature. But in other cases it may be a zoomorph. Thus Professor Haddon proves that crocodiles' legs (p. 23), the head and beak of a bird (p. 51), snakes (p. 176), the body of alligators (p. 171), the legs of frogs (p. 214), the extended wings of bats (p. 175), and human extremities (p. 271), may all work out at last, under prolonged artistic treatment, into simple geometrical zigzags. He shews, too, that the zigzag may even be derived from an entire article of women's clothing (p. 97), and so must be called, in his terminology, a physicomorph; and this designation must also include the zigzags of water and of lightning. On the other hand,

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that a zigzag often represents a plant-form, is often a phyllomorph, is easily proved.

A number of zigzags, then, may be precisely similar in appearance, and yet their origin may be altogether diverse. They may be homologous, as Professor Haddon puts it, but not analogous; and it is highly convenient to be able, by means of a nomenclature, to divide and to classify them.

One main purpose of the work is to show how and under what laws the figure of an animal or of a plant passes through those changes that ultimately make it indistinguishable from a skeuomorph, that render it subservient to decoration, and that reduce it to what were once thought to be primary geometrical forms.

The realistic animal figure, once recognised, continues to be recognised, no less, the while it undergoes gradual generalisation and simplification, the while it becomes gradually conventionalised. Its original purpose continues to be sufficiently served, for there is no breach in the continuity of observers.

It must not be supposed, however, that in effecting this abbreviation there is any conscious desire on the part of the artificer to "save time and trouble"; such an expenditure would, among "savages," be a pleasurable occupation of mind and body. But, nevertheless, action takes place in lines of least resistance, mentally and physically; and time and trouble are bestowed on multiplying resultant *motifs*, in spreading simpler forms over a widening area, and not at all in elaborating the original.

When a zoomorph is to break up into a zigzag or a scroll of a severe type, other factors in the process are the kind of cutting implement used, the nature of the material to be embellished, and the particular skeuomorph that happens to dominate the artificer's mind, that is most frequently followed by his eye, and that attracts to itself, as it were, and assimilates all approximate delineations.

But sometimes, as in Scandinavian art, the animal figure, in transforming itself into decorative designs, was not sharpened or attenuated or degraded, but rose into magnificent scrolls and swept the ornamental field with curves of rare beauty and dignity. Such an ascent is to be ascribed to the reinforcement of an artistic bent by the confluence of a foreign art-current, by what Professor Haddon calls "cross-fertilisation" (p. 150), as when Scandinavian tendencies were stimulated by a flood of Byzantine influence.

In this connection it is not a little odd that those parts of a dissolving zoomorph that longest survive so as to be distinctly recognised are very various. As regards the human figure, it is often the tongue that alone is left, or the legs; with bats, it is the wings extended in flight; with lizards, the foot in the form of a semicircular boss; and with other animals, the mouth or the eye. The reason of this it would be easy to conjecture, but difficult to demonstrate. Attention, expectancy, the near approach to a skeuomorphic homologue, and the ever-acting need of utility in the object

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that is decorated, would operate as factors, though not to the exclusion of others.

When the zoomorph has been traced to its source it becomes necessary to account for the animal presentment itself. What led the prehistoric cave-dweller to carve the figure of a reindeer on the handle of his flint knife? Why did Hervey Islanders incise upon their paddles the form of a woman? Why is an alligator depicted on the ware of Chiriqui?

Professor Haddon sets himself to answer such questions as these. Magic, that must have an imitation of the beings it wishes to control; totemism, that requires a token of kinship and clanship; metempsychosis, that sees bestial forms inhabited by the spirits of deceased men; pride of descent, that carves upon personal possessions the features of a tribal ancestor; religion, that finds abstract adoration made easier by the presence of an idol, of a symbol; such as these are the forces that originated the animal image. And in some cases such forces as these originated the vegetal representation also. Mr Goodyear has demonstrated that religion brought the lotus into the lovely art of Egypt, as the symbol of the sun, of life, of fertility, of the multiple soul; and lotus-derivatives, Nymphæan phyllomorphs, are now ubiquitous in every quarter of the globe.

It is however one of the merits of Professor Haddon's work to have shown that ornamental *motifs* exist that are not lotus-derivatives although closely resembling them. There are scrolls and frets that are skeuomorphs of basketry (p. 111); the guilloche is sometimes a zoomorph (p. 50), and the sigmoid curve likewise (p. 55); whilst the double scroll that is usually called Mycenæan, and that certainly came from the banks of the Nile, has been independently evolved from the eye and beak of the frigate-bird in the "Massim" District (p. 50). The causes that have brought the lotus and the frigate-bird to precisely the same peculiar and beautiful pattern in which no one, without instruction, could discover a trace either of animal or of flower, have been indicated, but they form part of a great and serious psychological problem.

Professor Haddon gives a valuable word of warning (p. 333) to those who interrogate minds of a low order. Careful questioning is absolutely necessary and should never be omitted in seeking for an interpretation of "designs" among the people who use them. Such persons are apt to say not what they know but what they think, or what they imagine would please or satisfy the inquirer. Or they will relate the gloss of a missionary. Familiarity with the growth of eponymic legends must prepare the investigator for a like phantasm, "the myth of observation."

Professor Haddon has but little to say on the curious fact that in some civilisations there emerges now and then a love of asymmetry; a subject on which Mr Goodyear is preparing a work. This revolt against symmetry, that startles and refreshes us in Japanese decorative art, that seems to have sprung up like a "sport" in minds saturated with formality, is to be found by those

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who look for it widely illustrated in the Gothic mediæval architecture of the Continent. It is justly observed (p. 201), however, that symmetry may be exhibited in the equal balancing of dissimilar designs.

The occurrence of "paired" animal forms in various parts of the world has not yet been explained. It seems that in Torres Straits, in order to mark ownership on certain objects, such as drums and pipes, two precisely similar animal figures are symmetrically disposed with regard to the middle line. Professor Haddon noticed that these paired forms, such as the cassowary, the dugong, the snake, the stingray (p. 17), were also tattooed in duplicate upon women's backs, and were known to be totem animals. He remarks (p. 18) that this pairing strongly recalls the "supporters" of our armorial bearings, and that there is reason to believe that these perpetuate in some instances the totem ancestors of our savage forefathers. There is moreover good reason to believe that the remote progenitors of many peoples practised tattooing. It is pretty certain that those of the Egyptians did so. Now in Egyptian art there was a frequent grouping of animals in pairs, but they were arranged back to back. In Assyria and Greece such coupled animals faced each other. Elsewhere, as in our own "lion and unicorn," the animals differ, but yet are symmetrically disposed. It would not be very surprising if it should turn out that this method of grouping originated in a custom of tattooing correspondent surfaces of the human body with the same design, of depicting the totem on each arm or leg, or on each side of the median line of the trunk.

No one interested in such subjects as these can neglect Professor Haddon's work. It is too comprehensive to be discussed in a brief notice. It is perhaps more comprehensive than a strictness of preliminary definition would have permitted. It even deals with the origin of the letters of the alphabet. But of this the reader has the advantage. It is especially valuable as containing a large amount of personal observation and original research together with much suggestiveness and ingenuity.

For a second edition slips of the pen and printers' errors should be eliminated. Such an expression as "a design may be apparently fairly uniformly distributed" (p. 327) mars an interesting paragraph, but it is more readily perceived by the critic than by the writer. These are insignificant blemishes. All fellow students will be grateful to him for what he has so well achieved.

HY. COLLEY MARCH.

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Buckle and his Critics: A Study in Sociology. By JOHN MACKINNON ROBERTSON. London: Swan Sonnenschein & Co. 1895. Pp. xv., 565.

THE volume before us affords a valuable analysis by one of Buckle's most thorough-going admirers of both the philosophical system embodied in the *History of Civilization* and also of the best criticism which that epoch-making work has since evoked. Adequately to assess the value of the criticism to which Mr Robertson in turn subjects the critics, would require a volume of corresponding dimensions; we can here only briefly note one or two of his main objections to their several points of view and describe, as concisely as may be, the main features of his own. In his preface he does not scruple to affirm that "to read Buckle's detractors is an education in the knowledge of human perversity, fallibility, and profligacy of blame;" and declares himself "convinced that the common depreciation of Buckle in recent years is in a large measure the result of slovenly reading and slatternly thinking on the part of men wont to sit in judgment on their fellows." It is perhaps somewhat to be regretted that at the outset he should have given such strong expression to his views, when throughout the following 500 pages it is his aim at least to appear as an impartial arbiter between his author and his critics. Nor, indeed, is it easy to resist the impression that in the great majority of the criticisms to which he here in turn successively subjects each hostile writer, Mr Robertson may at least claim to be fairer to his author than those have been whom he encounters in his defence. As regards Buckle and his great work it might, at first sight, well appear that the *argumentum ad verecundiam* is almost irresistible. When writers of such high attainments and various renown as Dr Tylor, Darwin, Macaulay, Matthew Arnold, Mr Leslie Stephen, Mr Gladstone, Mr John Morley, Mark Pattison, Sir Henry Maine, Bishop Stubbs and Vorländer, combine in almost unanimous disparagement of this immature production of a comparatively young writer, dying at Damascus at the age of forty, whose views had been formed in no school and his intellect disciplined at no university, it requires some moral courage to call in question the verdict of such a tribunal. On calmer consideration, however, it may fairly be said that the impression produced by so formidable a consensus of opinion becomes considerably modified. In the first place, it is certain that Buckle, young as he was, knew a great deal more than the majority of his critics. Lookers on, thinking mainly of his youth, were apt to forget how much a mind of great power and originality, with every advantage of leisure and opportunity, working continuously and connectedly for a lengthened period, is able to achieve. Between his father's and his own death, Buckle led an almost uninterrupted career of quiet, concentrated, independent study extending over nearly twenty years. When we remember that it

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took Gibbon about the same time from the commencement of his *History* to carry it to completion, we are reminded how much can be achieved under such circumstances; and "since Gibbon's time," in Mr Leslie Stephen's opinion (which Mr Robertson cites) "no Englishman of letters has devoted himself so systematically and vigorously to erect a literary monument worthy of the highest abilities as did Henry Thomas Buckle." In fact, Buckle's mental powers throughout his literary career were all aglow, and Mr Robertson appeals very justly to his known remarkable linguistic acquirements and his singular skill as a chess player as proof that in two very different fields of acquirement his merits were incontestable:—in the former case, as possessed of an extraordinary memory and a singular aptitude for mastering the technicalities of language,—in the latter, as endowed with admirable powers of synthesis. From Abelard, downwards, minds thus precocious and of intense luminosity, have, at rare intervals, flashed meteor-like across the domain of human thought, concentrating in a few years the energy and achievements of many a well spent life of ordinary duration. In the next place, the agreement of his critics cannot be regarded as cumulative evidence. It was the outcome very largely of jealousy and dislike,—supercilious contempt for a young man, who, not having taken a first class at either University, ventured to lay down the law for those who held themselves intellectually his betters. That agreement was the result also, far too frequently, of ignorance rather than of knowledge. "Nothing," says Mr Robertson, "has struck me so much in the investigation of the criticism passed on Buckle as the sheer ignorance of his book on the part of most of his assailants" (p. 36). And, thirdly, it is to be remembered that Buckle, dying in 1862, just missed, as did J. S. Mill, that development of the Darwinian theory of evolution, which, could he have lived to grasp it as applicable to social phenomena, must have afforded him new and invaluable guidance in formulating his bold generalizations. As it was, those generalizations, sometimes hasty and often imperfect and consequently in part erroneous, but rarely without some germ of valuable truth and always eminently suggestive, were assailable at various points to an extent of which his numerous antagonists were not slow to avail themselves. It was not a fort or a strong castle but a city, whose walls in their entire and vast circumference might scarcely be surveyed from its loftiest watchtower, that Buckle had to hold and defend. Since then, a generation has passed away; and Mr Robertson, calling to his aid a new literature and many a notable utterance, has undertaken the task (certainly no light one) of demonstrating that on all the more important questions at issue the weight of evidence is still in favour rather of Buckle than of his assailants. To preserve the metaphor, the defences of the city were, after all, constructed on more really scientific principles than most of the engines of the besiegers. Mr Robertson gives us, accordingly, seriatim, the various arguments and objections of the

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writers above-named and subjects them to a very rigorous and minute criticism. Intellectually, he appears to resemble his author but slightly. If Buckle's foible was rash and imperfectly considered generalization, his defender's is certainly that of excessive refinement and subtlety. Duns Scotus himself could scarcely, in some cases, have further prolonged the argument; and when Mr Robertson is to be found stopping to cavil at Mr Leslie Stephen's employment of a somewhat careless "indeed," the reader is apt to grow impatient and to hurry by more real and serious criticism. Briefly, however, to sum up the writer's chief indictments,—we find Mr Leslie Stephen arraigned on various points: his arguments against Buckle's theory of the relation between climate and civilization,—his misrepresentation of Buckle's opinion that "a permanent and continuous development of man's moral and intellectual qualities" is still, scientifically, unproven,—his assertion that he "cannot help feeling that more philosophy is held in solution in a few pages of *Old Mortality* or the *Heart of Midlothian* than in a hundred such volumes as Buckle's,"—and, finally, his criticism of Buckle's somewhat vague and contradictory language with regard to the employment and comparative value of the inductive and deductive methods. On the first of these questions, Mr Robertson certainly appears to have the better of the critic. Mr Leslie Stephen objects to Buckle's theory of the influence of climate, that "the relation between climate and civilization is not constant" (p. 50). To this Mr Robertson rejoins that it is "like saying that the law of gravitation ceases to operate when you climb a ladder"; and his argument in reply is certainly supported by the principles laid down by Professor Ratzel in his *Anthropo-Geographie*.

In dealing with Theodore Parker's criticisms,—which challenged alike the plan of the *History* and the List of Authorities cited by the author, the stress laid by Buckle on the influence of natural phenomena (as seen in the terrorism of the Hindu religion) and of diet, as shown in the greater or less activity of imagination—Mr Robertson urges arguments the force of which is undeniable. "We must take," he says, "all the phenomena into account together, for the complete explanation. The distance between the athletic Greek and his Gods was comparatively small, in terms of his self-confidence as well as in terms of the less awful aspects of his environment; the distance between the Hindu and his Gods was great, in terms of his physical abjection as well as in terms of the tremendousness of Nature; the effect of Nature on thought being thus seen to be operant through physique as well as through ideas" (p. 86). As regards the elements which went to build up the phenomenal development of ancient Greece, he points out that "while the mythology of India grew or fructified in the vast Indian regions, a world in themselves, with no definitely foreign interference, the cultures of ancient Greece represent *a complex of four civilizations*."

In dealing with certain "Academic Criticisms," Mr Robertson

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points out that Gibbon, Grote, Finlay, Lewes and Huxley owed nothing to Universities, and he holds that Professor Fiske has "not been prudent in prompting an inquiry which reveals that a great deal of the most original and important research and thinking done in England for generations has been achieved by men who either never attended a University or got next to nothing for such attendance" (p. 105). "When we admit," he says elsewhere, "that Buckle missed what disciplinary good the school and the University can yield to youth, we must not forget that he probably was what he finally was in part because he wholly escaped the averaging influence of the English public school and University training, so strangely potent for the destruction or restriction of all originality of mind" (pp. 520–1). Passing by the chapter on the "Anti-scientific View of History" (in which Dr Stubbs and Professor Froude figure as the chief offenders), we come to Chapter XI on "Buckle's real Errors." In this Mr Robertson sets forth "a number of faults" which he has himself discovered in his author's pages, but which he holds when corrected "leave the main values of his book only the more certain." One of these corrections strikes us as singularly happy and just. Buckle, in his first chapter, ventures on one of those dangerous generalizations which so frequently shake our faith in his guidance. "The most celebrated historians," he observes, "are manifestly inferior to the most successful cultivators of physical science: no one having devoted himself to history who in point of intellect is at all to be compared with Kepler, Newton, or many others that might be named" (p. 362). Mr Robertson rightly says that "on any view the proposition will not stand. Newton and Kepler represent one great kind of capacity; but they also had a great capacity for quite commonplace error, and it is quite impossible to make any relative measurement of their powers as compared with those of Gibbon" (pp. 362–3). In fact a unit of comparison is altogether wanting.

The concluding chapter on "Buckle's Personality" is of considerable interest; and not the least valuable portion of the volume is the Summary of Buckle's theory, as Mr Robertson interprets it, presented in the Appendix, together with the "Additions and Modifications" which he would himself suggest.

J. Bass Mullinger.

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VII.—NEW BOOKS.

Florentine Painters. By BERNHARD BERENSON, author of *Venetian Painters, Lorenzo Lotto.* New York: Putnam, 1896. Pp. 141.

I HAVE asked leave to introduce to the readers of *Mind* a book apparently destined for a very different public, because I am convinced that, instructive to students and lovers of art as Mr Berenson's "Tuscan Painters" is bound to prove, its great and original suggestiveness is fully appreciable only by professed psychologists.

That Mr Berenson himself is not a student of mental science, that he does not write for students thereof, and that his book shows no traces of psychological training, are circumstances which, as it seems to me, enhance rather than diminish the interest of his work in the eyes of psychologists. For we get in this volume a coincidence with some of the most significant recent psychological discoveries and hypotheses, which is convincing for the very reason that it comes, not as a result of philosophical speculation on the connexion between art and other mental phenomena, but in the course of an attempt, on the part of an already distinguished connoisseur and art-historian, to make others share the æsthetic emotions of which he is himself aware.

The subject of æsthetics, of the how and why of the perceptive and emotional phenomena connected with art and the Beautiful, is one which has occupied my own thought for many years, and upon which, in consequence, I have myself arrived at a certain number of conclusions. With these conclusions the facts and theories propounded by Mr Berenson by no means tally either as whole or parts; but such differences, however considerable, are thrown into the shade by my thorough agreement with the method and the spirit which Mr Berenson has applied to æsthetic problems; so that the brief space of a review will be more profitably employed by my placing Mr Berenson's views before the readers of *Mind* rather than by my criticising them in the light of my own experiences and hypotheses. And first, about the rank which the æsthetic phenomenon takes in life and life's development. Mr Berenson holds that, so far from the æsthetic phenomenon being, as we have been told, a species of accident in evolution, a sporadic activity which has survived, "like sea-sickness" says Mr W. James, without any apparent reason for survival, the æsthetic phenomenon has a very distinct *raison d'être* in the fact that it represents a direct increase of vitality, or, as Mr Berenson expresses it, that "art alone can give us the life-enhancing qualities of objects."

This life-enhancing power of art is not however sufficiently explicable by the reasons given by contemporary æsthetics; or rather, contemporary æsthetics, not having recognised the specific properties of art, have failed

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to explain artistic pleasure by reasons sufficiently specific to that form of pleasure: artistic pleasure, in painting (of which Mr Berenson exclusively treats) has been explained, for instance, by sensations in the visual apparatus, helped out by an army of ideational and emotional associations, and generally dismissed from psychological analysis as a case of the *play instinct*, itself a very vague entity indeed.

But Mr Berenson, basing his notion upon what he perceives as going on inside himself, offers an explanation which, without discarding any of those previously given, reduces them to mere coincident factors. The main pleasure of painting, he says, is due to the very special manner in which painting can make us realise spatial relations and movement: this special manner of realisation producing directly the sense of heightened vitality.

But how can realisation of spatial relations and of movement act in any way upon a phenomenon so organic, so bodily, as the sense of vitality?

Stripped of certain complications and (as I think) contradictions, Mr Berenson's answer can be reduced to a very startling formula: "We realise objects," says Mr Berenson (p. 84), "when we perfectly translate them into terms of our own states, our own feelings."

And this formula must not be understood in any metaphorical fashion. The states to which Mr Berenson alludes are *bodily states*, the feelings are such as are accompanied or actually produced by bodily sensations. "We watch (p. 86) those tautnesses of muscles and those stretchings and relaxings and ripplings of skin *which, translated into similar strains in our own persons*, make us fully realise movement." The thorough realisation by a painter of the spatial relations, of what Mr Berenson calls the *tactile values* of the objects represented, produces in the thoroughly appreciative observer much more than the mere cold intellectual awareness which has hitherto satisfied writers on æsthetics: "Our tactile imagination is put to play immediately. Our palms and fingers accompany our eyes more quickly than in the presence of real objects, the sensations varying constantly with the various projections represented, as of face, torso, knees, etc." (p. 12). Still greater is this activity of our own muscular sense where not merely spatial relations, but movement is efficiently forced on our realisation by the painter—"unless (p. 50) my retinal impressions are immediately translated into images of strain and pressure in my muscles, of resistance to my weight, of touch all over my body, it means nothing to me in terms of vivid (visual) expression."

Briefly: first, all vivid visual perception is due to the conversion of ocular impressions into feelings of bodily activity; second, such bodily activity produces a sense of *living* in those who experience it; and third, painting having the means of producing such a condition by processes more direct, more efficacious and more economical than those of reality, painting possesses the power of enhancing the sense of our own vitality. The painter has selected, isolated and reinforced all the characteristics which increase, without exhausting, the energy of him who perceives them. Hence we get in painting what Mr Berenson describes as a "hyperæsthesia not bought with drugs, and not paid for with cheques drawn on our vitality,"—and thanks to it we very literally "feel as if the elixir of life, not our own sluggish blood, were coursing through our veins."

Such is the essence of Mr Berenson's hypothesis. The reader of his volume will find it there complicated unnecessarily and even contradictorily with notions of self-conscious "Wille zur Macht" of which I have ventured to strip them. The reader will also be puzzled, until he remembers that Mr Berenson is essentially a connoisseur, a professional

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expert rather than an engaging æsthete, by the deliberate neglect of so important an item in æsthetics as mere "Beauty": the book will seem, even within the field purposely restricted by the author, narrow and even crotchety. But it appears to me that no person with the habit of æsthetic introspection can deny that Mr Berenson has at last applied to artistic phenomena the only method which can lead us to differentiate and study them as an important branch of psychic life. Similarly, I imagine that no student of contemporary mental science can fail to be deeply impressed by the coincidence between Mr Berenson's analogies and hypotheses and the trend of physiological psychology. As regards myself, although I cannot accept Mr Berenson's views as a sufficient explanation of the pleasure derived from painting, I am desirous to place his little book in the hands of psychologists, because it seems to show in the most convincing and also the most suggestive manner that æsthetics ought to become one of the most important fields for psychological observation, analysis and speculation. How significant the empirical study of æsthetics can be Mr Berenson has already shown with an acumen and a philosophical imagination which promise great achievements therein on his own part.

VERNON LEE.

Thinking, Feeling, Doing. By E. W. SCRIPTURE, Ph.D., Director of the Psychological Laboratory, Yale University. Meadville: Flood & Vincent, 1895. Pp. xii., 304.

From the author of the research *Ueber den associativen Verlauf der Vorstellungen*, and from an unwearied advocate of the "New Psychology," we had a right to expect a text-book of no inconsiderable freshness and originality. There is but little doubt of the presence of both of these qualities in overflowing measure in the work under review: but a freshness amounting to coolness in the unacknowledged appropriation of diagrams and text, together with an originality most in evidence in a condescending jocularity of a nursery-book type, is hardly fitted to commend the volume to any well-wisher of the science of Psychology. The work bears the imprint of the Chautauqua Century Press, and is written, the author informs us in the preface, "expressly for the people." After acquainting himself with the character of the book the reviewer feels constrained to say that its ready acceptance by those to whom it is dedicated would indicate that "the people" stand more in need of the services of a missionary than of a psychologist.

It is this very effort to write a popular treatise which is the bane of the book. The effort is seen in the comparatively large amount of text and cuts devoted to the reaction-times of athletic exercises—at present of small psychological value,—in the disproportionate amount of space given to colour-blindness, in the remarkable 'practical' suggestions (as in the colour-top device for matching dress patterns), and even in appeals to popular prejudice. Apropos of colour-blindness the author remarks: "Are we to suppose that the many Englishmen are colour-blind who can see in the Irish flag only a symbol of anarchy?" (p. 176). This, as the politicians would say, seems to be an attempt to catch the Irish vote. As is to be expected of a popular work, the book is profusely illustrated: there are 294 illustrations for 295 pages of text. To five of the cuts the author gives *prima facie* evidence of ownership—for his electrotype likeness appears therein—but to some of the rest his title is not so clear.

Whether a given diagram or cut may be regarded as having passed into the common stock or not is a matter of literary casuistry. It is also to be

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said that in an elementary text-book one is not called upon to acknowledge the source of each cut separately. But Dr Scripture has drawn from many sources beside the common stock. He has fitted out his book with diagrams and cuts from treatises, investigations, works and catalogues, and nowhere—not even in the preface—does one find any acknowledgment of his broad indebtedness.

A graver fault confronts us in the text. Dr Scripture has quoted copiously from Creighton and Titchener's translation of Wundt's *Menschen- und Thierseele*; but has neglected to pay to the translators the tribute of quotation marks. Twelve pages of the thirteen making up Chapter XVII. are taken from this translation without other acknowledgment of the source than the general statement that "Wundt is to be followed for the rest of the chapter"! And this is by no means the only case of "borrowing."

As regards the plan of structure of the book, one finds that it amounts to a series of chapters connected chiefly by the binding. Chapter III. is on Reaction-time; Chapter VI. on Power and Will; Chapter XVI. on Feeling; Chapter XVIII. on Memory. The book can be read beginning with the last chapter as easily as with the first. This amorphous structure is, however, probably deliberate with the author; for he informs his readers that the "New Psychology confines itself strictly to fact." This statement is to be reconciled with the fact that the latest authoritative work on experimental psychology—Külpe's "Outlines"—abounds in theory and hypothesis.

Thinking and Doing take up twenty of the twenty-two chapters comprised in the book. Feelings come off with twelve pages, and Emotions with thirteen—twelve of these from the unacknowledged source mentioned above.

Dr Scripture is especially severe upon what he calls the "arm-chair" psychologist. "For several thousand years," he writes, "psychologists have been waiting and watching: it has never occurred to them to labour also. Sitting at home in the arm-chair is very pleasant; but it is not the way to do business, and consequently psychology has been going backward." It is a pity that the misguided English philosophers, from Locke, Hume, and Berkeley, down to the Mills, had not been checked in their retroactive efforts by the olfactometer and the hypnotic button; and it is to be regretted that Dr Thomas Brown, who sometimes clung to his arm-chair through the entire night in writing his lectures, had not been kindly advised that it was "not the way to do business."

It is to be sincerely deplored that a psychologist of Dr Scripture's ability has chosen to sacrifice his work to an attempt to come down to the popular level,—an attempt, in the reviewer's opinion, which has resulted in excavations beneath the popular level. The book itself bears evidence enough of the author's knowledge of experimental psychology and of his fertility of resource in experimental methods. But despite this, it is to be hoped that custom may never stale the variety of this particular form of the "New Psychology," and that it may ever remain unique.

FRANK ANGELL.

The Child and Childhood in Folk-thought. (*The child in primitive culture.*) By A. F. CHAMBERLAIN, M.A., Ph.D. New York: Macmillan & Co., 1896. Pp. x., 464.

This work is a sort of lexicon of 'paidology.' It is a careful and laborious compilation of all that refers to the child and childhood in popular thought. There are thirty-three chapters, dealing with children's food, souls, flowers,

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animals, etc.,—the child as poet, linguist, actor, teacher, judge, oracle-keeper, weather-maker, healer, hero, etc., etc. Each chapter is subdivided into numerous sections. Thus that which treats of the child in the primitive laboratory has paragraphs upon licking into shape, massage, face games, primitive weighing, primitive measurements, measurements of limbs and body, tests of physical efficiency, sleep, and heroic treatment. Six chapters are lists of proverbs and familiar sayings about children and childhood, collected, as the author candidly remarks, from pre-existing dictionaries of quotations and proverbs. A very useful bibliography of 549 titles, and three elaborate indices close the volume.

The writer's thesis is that "the child is as important to the savage... as to the civilised" man. "Everywhere through the world the activities of childhood have been appealed to, and the race has wonderfully profited by its wisdom, its *naïveté*, its ingenuity and its touch of divinity." "Upon language, religion, society and the arts the child has had a lasting influence, both passive and active, unconscious, suggestive, creative. History, the stage, music and song have been its debtors." And the thesis is supported by a great mass of authoritative evidence. Mr Chamberlain's enthusiasm has enabled him to weld his materials together into some sort of unity; and his occasionally emotional way of presenting his facts will bring him readers, while it does not seriously affect his scientific attitude.

Not the least valuable thing about the book is its suggestiveness. There is hardly a section that does not furnish a subject for detailed investigation to the anthropological psychologist.

The Number Concept: its origin and development. By L. L. CONANT, Ph.D. New York: Macmillan & Co., 1896. Pp. vii., 218.

This is a very complete study, by a mathematician, of the anthropology of number. The faculty of counting is taken for granted. The author believes, with Külpe, that "the primitive conception of number" is "fundamental with human thought," and so does not attempt, as Preyer has recently done, to derive it from something which is not numerical. The only legitimate objects of inquiry are "the primitive methods of counting and of giving visible expression to the idea of number."

Ch. I. discusses finger counting, and deduces certain peculiarities of the finger scale from the facts of attitude, right-handedness, etc. Ch. II. compares the limits of numerical systems in savage and civilised communities. Chs. III. and IV. trace the origin of number words. We find that "all above two, three or at least four are almost universally of digital origin." A table is given of the various ways in which the primitive mind conceives of number: thus "one" is "existence, piece, group or beginning"; "eight" is "five-three, second three, two fours, or two from ten," etc. Ch. V.—a very interesting chapter to the psychologist—deals with other than the natural (finger, *i.e.* 5, 10 and 20) number bases. Binary and quaternary systems are not rare; ternary bases are less frequent; while "there is probably no recorded instance of a number system formed on 6, 7, 8, or 9 as a base." Traces of enumeration by such systems are discoverable in systems otherwise formed, but the author proves that they call for special and local explanation. The duodecimal scale is "the scale of civilisation," but will never supplant the decimal in ordinary use. The two concluding chapters take up the quinary and vigesimal systems in detail.

Professor Conant has been admirably careful in his use of authorities, and the judgments which he passes upon evidence are impartial and well-balanced. His book is the most comprehensive treatment of its

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subject extant: between two and three hundred number scales are transcribed and analysed. It may be cordially recommended.

Movement. By E. J. MAREY. Translated by E. PRITCHARD. (International Scientific Series, vol. lxxiii.) New York: D. Appleton & Co., 1895. Pp. xv., 323.

Psychologists, no less than physiologists, must welcome the appearance of Professor Marey's *Le mouvement* in an English dress. Many of the methods which it describes have been, and others will be, of service to experimental psychology. To mention one only,—it is surprising that use has not been made of the zootrope, for the investigation of associative and apperceptive completion of impressions, to a far greater extent than has actually been the case.

Mr Pritchard has given us an accurate and readable translation. But he has made some regrettable departures from the original, cutting out a round dozen plates (among them, the two phototypes with which the French volume ends) and the author's index to illustrations. The numbering of the early plates has been quite needlessly altered. There may be reasons for certain of these changes, though none is alleged in the preface. But the bad printing of the plates in general is inexcusable. In the writer's copy, Fig. 17 is no figure at all; and some fifteen others would be unintelligible, were their French impressions not familiar.

The Psychology of Number, and its applications to methods of teaching arithmetic. By J. A. MCLELLAN and J. DEWEY. (International Education Series, vol. xxxiii.) New York: D. Appleton & Co., 1895. Pp. xv., 309.

This little book falls into two distinct parts, as its title indicates. The second and practical part is, so far as the lay mind can judge, exceedingly good. What is more, its polemical tone seems to argue that it is needed at the present juncture as a corrective to vicious school practice. The first part discusses the psychical nature, origin, definition, etc., of number by the method, and even in the terms, of the Hegelian dialectic. It will hardly recommend itself either to the psychologist or the mathematician as an adequate account of the number idea and the number judgment.

The Beginnings of Writing. By W. J. HOFFMAN, M.D. (Anthropological Series, No. 3.) New York: D. Appleton & Co., 1895. Pp. vii., 209.

There is very little psychology in this volume, which should have borne a more specific title. It is a popular account, profusely illustrated, of the forms and underlying principles of American picture-writing. Only now and again (*e.g.* in the chapter on Symbols) does the psychological problem come to the front with any explicitness.

At the same time the writer keeps well within the limits of established fact, and the psychological reader will find, between the lines, a good deal to interest him.

Philosophy of Theism: being the Gifford Lectures delivered before the University of Edinburgh in 1894–95. First Series. By ALEXANDER CAMPBELL FRASER, LL.D., Hon. D.C.L. Oxford, Emeritus Professor of Logic and Metaphysics in the University of Edinburgh. Edinburgh and London: William Blackwood & Sons, 1895. Pp. 297.

Professor Fraser's final chapter has for title "What is God?" This is the problem of his book. He considers in succession the solutions offered by Panmaterialism, Panegoism, and Pantheism, and concludes that none of

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these can afford a satisfactory ultimate conception. If the question were purely theoretical, Agnosticism might be a tenable position. But Agnosticism would logically lead to universal nescience, and "the mental state in which one doubts about everything is a state in which man cannot live" (p. 278). We need a practical answer to the question, What is God? From this point of view "the deepest and truest thought man can have about the outside world, is that in which the natural universe is conceived as the immediate manifestation of the divine or infinite Person, in moral relation to imperfect persons, who, in and through their experience of what is, are undergoing intellectual and spiritual education in really divine surroundings" (p. 280).

The Worship of the Romans, viewed in relation to the Roman temperament. By FRANK GRANGER, D.Lit., Professor in University College, Nottingham. London: Methuen & Co., 1895. Pp. ix., 308.

A well-written and useful account of the magical and religious customs and beliefs of the Romans. In the writer's view magic is more primitive than religion. The titles of the chapters are: "The Roman Spirit," "Dreams and Apparitions," "The Soul and its Companions," "The World Around," "Nature Worship," "Primitive Thought," "Roman Magic," "Divination and Prophecy," "The Primitive Idea of Holiness," "Holy Places and Idolatry," "The Divine Victim," "The Sacred Drama." The writer approaches his subject with the insight derived from a thorough knowledge of recent work on folk-lore.

Studies in the Evolutionary Psychology of Feeling. By HIRAM M. STANLEY. London: Swan Sonnenschein & Co. New York: Macmillan & Co., 1895. Pp. vi., 390.

This work is characterised by vigour and originality. The writer regards Feeling as the primary fact of psychical life both in the race and in the individual. Not only Cognition in general, but every cognitive state, is generated by a prior pain or pleasure. Most of the book is devoted to an analysis of the special emotions and of their development. Whatever may be thought of the writer's general theory, there is much in this part of the work which is distinctly valuable. (Fuller notice follows.)

Criminal Sociology. By ENRICO FERRI. London: T. Fisher Unwin, 1895. Pp. 284.

This is the second volume of the Criminology Series edited by Mr Morrison. In the preface to the present volume he calls attention to the fact that the problem of crime is again pressing its way to the front and demanding re-examination at the hands of the present generation. As evidence of the dissatisfaction which exists with regard to penal institutions in their present form, Mr Morrison calls attention to the large number of government inquiries which have recently been held respecting them. The result of these inquiries has been to sustain Professor Ferri's opinion that the criminal problem will not be solved by a resort to measures of a merely punitive and repressive character. Crime is a product of adverse individual and social conditions, and it can only be successfully dealt with by ameliorating those adverse conditions where it is possible to ameliorate. In cases where these conditions are not susceptible of amelioration, the only other effective alternative is to exclude the offender from ordinary social existence. It is unnecessary for us to review this book at greater length inasmuch as the original Italian edition has already been noticed in the pages of *Mind*. The English edition will be a boon to those who do

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not read Italian. It is an admirable introduction to the problems of Criminology.

Le Socialisme au XVIII^e siècle. Étude sur les idées socialistes dans les écrivains français du XVIII^e siècle, avant la Révolution. Par ANDRÉ LICHTENBERGER, docteur ès lettres. Paris: Félix Alcan, 1895. Pp. 471.

This volume is an interesting and comprehensive examination of the Socialist ideas current in French literature in that portion of the eighteenth century which preceded the great Revolution. In the execution of his task M. Lichtenberger, whose name reveals his origin, has exhibited a pleasing combination of German exhaustiveness and French lucidity.

He has ransacked the literature of the period with admirable patience and industry, and must be complimented on the singular spirit of impartiality with which he sets forth the economic ideas of the writers whose works he has undertaken to analyse.

In recent years Socialism has become an exceedingly vague term. In the mouths of many men it is merely another word for philanthropy, and even amongst those who use it in a more scientific sense there are considerable differences of opinion as to its interpretation. In order to make matters perfectly clear on this head M. Lichtenberger begins by telling his readers what he means by Socialism. With him it is not a body of doctrine which covers the whole field of collective life and effort. He regards it solely in its economic aspect as a theory which has for its object the collective ownership of property. The question therefore which he has set himself to answer is this: In what manner was the collective ownership of property held, and to what extent did this conception of the ownership of property permeate the public mind in the ninety years anterior to the Revolution? In order to answer this question satisfactorily we are presented with a careful examination and analysis of the literature which bears upon it. This involves an exposition of the ideas of writers such as Meslier, Montesquieu, D'Argenson, Morelly, Rousseau and his disciples: the Encyclopedists and the physiocrats. Socialist ideas in a more or less definite form were not confined to writers on philosophy and economics. They had a wider audience and were popularised in romances, poems, and plays. Accordingly M. Lichtenberger discusses and interprets the nature of the relations which existed between socialism and literature. M. Lichtenberger's examination of the Socialist utterances of the eighteenth century leads him to the conclusion that Socialist principles were not as a rule enunciated with the object of revolutionising the economic basis of society. These principles were formulated and appealed to in order to procure what would now be considered very moderate reforms. The writings of Brisson de Warville and of the notorious Marat contain interesting examples of this method.

The excessive severity of the criminal law was a subject which aroused the keenest indignation in the pre-revolutionary period. Punishments were inflicted on offenders altogether out of proportion to the gravity of the offence or the necessities of social security. Capital punishment was the penalty for petty theft and most other offences were punished with similar harshness. In order to obtain a mitigation of the punishment of offenders against property both Brisson and Marat bring forward arguments fatal to the existence of private property altogether. But these arguments were adduced merely to secure a more humane penal code and not for the purpose of effecting fundamental changes in the economic constitution of society. Of course there were writers who went further, but in all cases their ideas were of a speculative character.

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In order to translate these ideas into practice economic conditions were required which did not exist in the eighteenth century. Socialism as a plan for the economic organisation of collective life has only assumed a practical shape since the rise of great industrial and commercial enterprises. It is the coming into existence of these great undertakings which has produced latter day socialism. But it was the men of the eighteenth century who pointed out the way for existing socialist parties by ventilating the idea that civil equality is impossible without economic equality. To all who are interested in the evolution of political ideas and doctrines M. Lichtenberger has produced a volume for which they will be grateful.

La Superstition Socialiste. Par le BARON R. GAROFALO. Paris: Félix Alcan, 1895. Pp. 299.

It must be said that M. Garofalo has written a lively, vigorous and combative book, and a book exhibiting a considerable amount of controversial ability; but the effect of his polemic is to some extent destroyed by the needless alarm with which he contemplates the Socialist movement. He tells us that his book is directed against revolutionary Socialism, but revolutionary Socialism, or for that matter Socialism of any serious kind, is not a theory of the State which need discompose the equanimity of sensible men. Garofalo's fear of socialism arises largely from his detestation of the mob. Of all Latin sayings the one he loves best is "Odi profanum vulgus," "I detest the mob," he says, "in every shape and form. The applause of the ignorant does not give me the slightest satisfaction; their hootings are equally a matter of indifference. That is, perhaps, one of the reasons why I have never become a candidate for public offices, not even for the position of a Municipal Councillor. Instinct may play a part in this sentiment of repugnance, but reason justifies it too. I am persuaded that everything which proceeds from the mob is always bad. It can destroy, but it is incapable of constructing. I believe that no one can do a more detestable thing than to disseminate among the poorer classes the idea that they have been dispossessed and that they have a right to take their revenge. I clearly perceive that the ill will excited among one section of the population against the other can produce no other result than a cooling down of the sentiment of cordiality and solidarity which constitute the foundations of human Society."

Garofalo is evidently afraid lest the mob should become the instrument of agitators bent on the destruction of private property as a social institution. There is really little cause for alarm on this score. Of all sections of the community the masses are the most conservative. No doubt the masses have at times participated in revolutionary episodes. But these episodes must not be accepted as an expression of the settled and habitual temper of the popular mind. On the contrary they are very exceptional incidents. It is quite a mistake to infer from these exceptional outbursts that the masses are always in a mood for violent and fundamental social transformations. As a matter of fact the habitual temper of the masses is to hold on with an unreasoning tenacity to the habits, customs, traditions, prejudices and institutions of the past. The lower down we go in the scale of civilization the greater is social immobility.

This is a truth which we should be justified in describing as a Sociological law. This law is applicable to the various grades of Society, and it may be said with a near approach to accuracy that the lower down we descend in the social scale the greater is the aversion to change. The advent of the democracy to supreme power so far from producing revolution is much more likely to produce stagnation. It is, in fact, probable

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that those countries which are most completely under the dominance of the masses may eventually lose their place in the international struggle for existence owing to the extreme unwillingness of the electorate to adjust their laws and institutions to the new conditions which are always developing in the family of nations.

De la Contingence des Lois de la Nature. Par ÉMILE BOUTROUX, Professeur à la Faculté des Lettres de Paris. Paris: Félix Alcan, 1895. Pp. 170.

This essay is a reprint of the thesis presented by the author for the doctor's degree at the Sorbonne in 1874. Its main object is to demonstrate the existence of a radical contingency in nature in order to make room for free will. Indeed so strongly does M. Boutroux insist on contingency that at times he is led into a position dangerously like Hume's. Thus he asserts that causality, *i.e.* an invariable connexion between events, is only contingent and not necessary.

The author begins with a discussion of necessity, and finds that Logic and Mathematics give us the perfect type of it. But this is just because they are abstract sciences and do not deal with reality in the concrete. The laws of Logic have little to do with the inner nature of things. If we turn, on the other hand, to the actual world, we find contingency everywhere. Being actually given is not a necessary consequent from the possible. Its existence is contingent. Again, reasoning *a posteriori* and *a priori* proves a radical contingency in the natural production of genera and species such as we find Biology dealing with. There are no "kinds," the denotation and connotation of which are exactly determinate and unchangeable. In a similar way M. Boutroux proceeds to point out how, as we ascend the scale of being, new elements are constantly met with which cannot be logically deduced from what we may have previously found existing. Thus life cannot be explained on mechanical principles, and consciousness cannot be deduced from physical and physiological laws.

Having thus cleared the ground, M. Boutroux is in a position to introduce free will. His conclusion is that each being, animate or inanimate, is gifted with a spontaneity to realise the ideal of which it is capable. That ideal is to become as like God, the First and Final Cause of all things, as the nature of the creature permits of it. It is given to man to approximate to this perfection in a greater degree than the other animals, and so he is gifted with a greater freedom. "L'homme est l'auteur de son caractère et de sa destinée" (p. 145). This constant striving after an ideal is the essence of things. The laws of nature are the artificial and fixed image of what is living and changeable in its very essence. Their apparent necessity is explained by the stability inherent in the ideal itself. So necessity becomes the mean term between the world and God. The essay as a whole is brightly written.

W. F. TROTTER.

Histoire de la Philosophie Atomistique. Par LÉOPOLD MABILLEAU. Paris: Félix Alcan, 1895. Pp. vii., 560.

M. Mabilleau's task is a twofold one. He attempts, in the first place, to write the history of Atomism, and, in the second, to form an estimate of its value as a scientific and metaphysical hypothesis. His opinion on the second question is that of a decided adherent of the Atomist school. Atomism is for him at once the most satisfactory of scientific working hypotheses, and the metaphysical doctrine which lends itself most easily to the support of a theistic and spiritualistic conception of the universe. "The corpuscular philosophy," he says, quoting Voltaire, "is the shortest

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path to the discovery of the soul and of God." From the historical point of view M. Mabilleau's undertaking is perhaps more ambitious than fortunate. He begins his review of the various atomistic systems of antiquity with a survey of "Atomism among the Hindus," devoted mainly to an account of the system of Kanada which he assigns, in spite of the suspicious analogies with Aristotelian technical terminology, to a period "several centuries" earlier than the era of Leucippus and Democritus. The account of Kanada is followed by a sketch of Greek atomism, which M. Mabilleau, in opposition to the established views on the subject, regards as having been largely influenced, to say the least, by Hindu speculation. Unfortunately for M. Mabilleau the force of his argument is greatly weakened, if not altogether destroyed, by his readiness to rely on the worthless statements of Neo-Pythagorean authors of the type of Iamblichus, whose judgment, not to say their veracity, is hardly above suspicion. A chapter on "Atomism among the Arabs" serves as the connecting link between Greek and modern speculation on the subject. We are then conducted through the theories of the alchemists and the "theological" atomism of the eighteenth century, to the "scientific" atomism of the present day. (Fuller notice follows.)

A. E. T.

Le Réalisme Métaphysique. Par ÉMILE THOUVEREZ, Professeur agrégé de philosophie, Docteur ès lettres. Paris: Félix Alcan, 1894. Pp. 282.

M. Thouverez holds with Hegel that the rational is the real. The categories of human knowledge are, according to him, not merely subjective forms; they constitute the nature of the real, and have their source in the nature of the absolute creative activity. This doctrine is what M. Thouverez means by metaphysical realism. Perhaps the chief interest of his book lies in the view which he takes of the interconnexion of the categories. He arranges them in an ascending series, according as they express more and more profoundly the nature of reality. Each higher category presupposes the lower as its necessary condition: but at the same time contains something essentially new. The lower is related to the higher as matter to form, in the Aristotelian use of these terms. The coincidence with Aristotelian doctrine is emphasised by the teleological language used: the lower categories are constantly spoken of as existing for the sake of the higher. The principles of Identity and Sufficient Reason, Deduction, Induction, Analogy, Faith, Number, Space, Time, Substance, Cause, End, Duty, and God, form the main topics discussed. There is much that is suggestive and helpful in the detailed treatment of these conceptions.

Der Kampf um einen geistigen Lebensinhalt. Neue Grundlegung einer Weltanschauung. Von RUDOLF EUCKEN, Professor in Jena. London: Williams & Norgate, 1895. Pp. 400.

This work, the author tells us in his preface, is intended to be an uncompromising polemic against the Naturalism of the present age, the object being to establish from a new point of view the reality of an order of Being independent of, and superior to, the Universe of sense-perception.

Professor Eucken complains that the idea of a mode of existence not amenable to sense-consciousness has become almost an obsolete tradition. To rehabilitate this *geistigen Substanz*, as he terms it, in the realm of contemporary culture, is the design of the present Essay. The entire work is divided into two main divisions, the first designated the Ascent, or *Aufsteigender Teil*; the second the Descent, or *Absteigender Teil.*

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It is not very easy to make clear to an English reader the exact position assumed by Professor Eucken, but perhaps he may be best described as a Metaphysical Anarchist. He will not be bound by the speculations of philosophy, nor the dogmas of science. He neither believes in a noumenal nor a phenomenal Universe. He trusts neither the averments of sense nor the categories of the understanding. But even an Anarchist must take his stand somewhere, so on page 6 we find the learned Professor condescending to an axiom which is sufficiently comprehensive, if not very intelligible to any but Hegelian students. As far as we can make out, however, from this initial pronouncement it would seem that the one real substance of the Universe is a spiritual entity, the soul of the age, embodying eternal truth, and constituting a timeless reality. This spiritual substance, this increasing purpose that through all ages runs, we are familiar with as the *Zeitgeist* of the poets, and it might be construed without much violence into the goal of evolution, the immovable outcome of the cosmic process. On page 16, Professor Eucken tells us that the main contention, the *Hauptproblem* of the present treatise, is to establish the activity, spontaneity and eternally expanding development of the individual soul. These are the characteristics of the only reality that can be grasped by the human intellect. Autonomy is the criterion of reality. The Idealist Metaphysic has here certainly an advantage over the Materialist inasmuch as the former rests on the positive conception of reality, while the latter is content with a mere negative abstraction termed the unknowable. Professor Eucken seizes upon this dialectic weakness in the scientists' theory of Being. There is no Autonomy in Nature, therefore there is no reality in Nature. Just so, admit the scientists, but then we seek our reality in a realm transcending Nature. But, replies the Idealist, our conception of Nature is that of a spiritual process, the very principle of which is that self-initiating Autonomy which is not to be found in the phenomenal Universe. At page 31, Professor Eucken contrasts the substance of spiritual life with that of physical life. Spiritual Being is a series of consciously self-initiated impulses, whereas the life of the Materialist is the evolution of a surd fatalist potentiality enchaining the succession of phenomena in a rigid order of development. In spiritual life there is no potentiality, no necessary sequence; the child is not the father of the man, as the oak is in the acorn.

The considerations opened up by the conception of a spiritual as opposed to a physical mode of existence have, as Professor Eucken shows, something more than an academic interest. The question of the possibility of moral amelioration in a human being is every day discussed amongst philanthropists, and reduced to practical experiment by enthusiastic reformers. With the spiritualists the life of the individual is undergoing perpetual renovation (p. 32), so that there is always a possibility of making a fresh start. At page 213, Professor Eucken marshals the empirical evidence, in support of the reality of a power in Nature, transcending and dominating Nature; such a power is a spiritual energy quite apart from any mechanical or physical force. The triumphs of Art in the subjugation of nature are proofs that the human intellect is informed by a faculty, able to enslave and control the brute properties of matter; and while these properties are constant in the mode and extent of their operations the power of human knowledge is perpetually increasing and modifying our conceptions of natural processes. Again, the records of history attest the reality of a hyperphysical mode of being. There is a universe of ideas determining the course of human affairs, from generation to generation, issuing in the progress of culture and the evolution of social types. A struggle for existence is perpetually being waged between the immanent forces of nature and the plastic powers of the *geistigen Lebensinhalt*. It is true that in this

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conflict the spiritual side is not always triumphant, and it is to a consideration of this aspect of existence that Professor Eucken addresses himself on page 245. Space is then devoted to a criticism of the Optimistic and Pessimistic views of this great problem,—the mixed character of human life. Professor Eucken is not inclined to accept any of the current solutions of the enigma, but counsels philosophers to look for a higher synthesis (p. 267).

The very fact of the ever present *Kampf* in the realm of nature Professor Eucken takes to be a warrant for the reality of a spiritual mode of existence where intellectual and moral antinomies will alike be reconciled.

The second part of the work is an application of the theory of Being, propounded in the first part, to the practical requirements of human existence such as Religion, Ethic, Art, Philosophy. There is much elevating and stimulating suggestion in Professor Eucken's Essay, but his mode of exposition is somewhat too comminuted and prolix.

T. W. Levin.

Die Spiele der Thiere. By Karl Groos. Jena: G. Fischer, 1896. Pp. xvi., 359.

In this book the author seeks to prove that the play of animals is due to an instinct developed by natural selection, and useful in practising those movements which are of service in the struggle for existence. Herbert Spencer's view that play depends on superfluity of energy is regarded as insufficient; superfluous energy being a favourable but not an essential condition. Imitation, which Spencer gave as a secondary cause of play, is shown in many instances to be out of the question, and is regarded by the author as due to an instinct allied to the play instinct. A full and interesting history is given of the opinions which have been held on the nature of instinct, and the author concludes by agreeing with Ziegler, whose theory resembles that of Spencer in regarding instinct as complex reflex action depending on inherited nervous arrangements, without however accepting with Spencer the inheritance of acquired characteristics. The various forms which the play of animals, and especially of young animals, may take, are very fully described, with an abundance of illustrative examples drawn to a large extent from the work of those who have observed animals in a wild condition. The first and simplest kind of play is called "experimenting" and includes all those movements by which the young animal obtains command over its own movements and over external objects; other kinds of play include hunting, fighting, building, nursing, etc., while the performances of courtship are treated in a separate chapter, distinguished as they are from the other forms, in that they have a direct purpose.

Much space is devoted to the psychological aspect of play. The play of young animals is held to be purely instinctive, the only psychical accompaniment being the pleasure attending the satisfaction of an instinct. In the higher animals the author believes that there is often consciousness of sham-occupation, giving in support of this view instances of dissimulation in animals. In the various grades of the consciousness he sees divided states of mind analogous to those occurring in the hypnotic and allied conditions. When considering curiosity in animals the author advances the view that the primitive form of attention is not concentration on an impression actually present, but the expectation of a future impression associated with preparation for the instinctive movements which the expected impression will call forth; a watching cat is given as a typical example. (Does not an expected impression imply a conscious-

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ness of the nature of the impression which in its turn involves previous attentive perception?)

In his preface the author complains that most of those who have written on animal psychology have too much sought out human characteristics. His own aim has been rather to study those features which are especially characteristic of the animal, and his work shows a marked freedom from the anthropomorphism which vitiates so much work on the animal mind. A second book is promised which will deal with the subject of human play.

Die Umwälzung der Wahrnehmungshypothesen durch die mechanische Methode. Nebst einem Beitrag über die Grenzen der physiologischen Psychologie. Von Dr HERMANN SCHWARZ. Leipzig: Duncker & Humblot, 1895. Pp. xx., 195 (Erster Teil: *das Problem des unmittelbaren Erkennens*), 213 (Zweiter Teil: *das Problem des Sinnesqualitäten, & Anhang*).

Dr Schwarz has set himself the task of combating the prevailing tendency to regard the secondary qualities as subjective affection objectified. In an earlier work he directly attacked this current fallacy, as he rightly deems it. In the present volume he resumes the same topic from an historical point of view and gives a most interesting account of the phases through which the problem of sense-perception passed in the transition from scholasticism to the modern mechanical view of the material world. Suarez, Thomas Aquinas, and Gabriel Biels are selected as typical representatives of the scholastic point of view. Dr Schwarz, while exhibiting clearly the difficulties of the doctrine of "species" mediating between the object and the mind, points out that the schoolmen were in the main free from a confusion which has had a disastrous influence on more modern theories. They did not interpose between the object and the mind a second vicarious object, as those do who hold that we know in the first instance only our own subjective states. Suarez, for instance, insists that we perceive "non speciem sed per speciem." Descartes and Hobbes are taken as representative of the revolution in the theory of sense-perception which the mechanical view of nature produced. The influence of the old doctrine of species on Descartes is well brought out. In some points however we question the writer's interpretation of the Cartesian position. It is clear to us that Descartes held the secondary qualities to be in their own nature purely modes of consciousness. When we conceive them distinctly we can according to him conceive them only in this way, and not as being in any manner or degree modes of extension. Dr Schwarz says that for Descartes they were qualities of the complex formed by the union of soul and body.

The appendix on the limits of Physiological Psychology contends that the distinctions possible from a physiological point of view cannot keep pace with the number and subtlety of the different modalities of consciousness. The argument appears to us quite unconvincing.

Le Dottrine Filosofico-Religiose di Tommaso Campanella. By Dr GIO. SANTE FELICI. Lanciano; 1895, (London: Williams and Norgate). Pp. xxxii., 285.

Campanella comes last in the brilliant series of Italian Renaissance philosophers begun by Marsilio Ficino and continued by Pomponazzi, Telesio, and Giordano Bruno, who attempted, but with less success, to do for ancient thought what the Italian Humanists did for classic literature, and the Italian artists for the classic ideals of visible beauty. They form

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not so much a progressive line as a curve returning on itself. Dr Felici, without exactly intending it, shows us his hero in complete reaction towards the Aristotelian and medieval point of view from which Ficino had broken away. This was due partly to the spontaneous movement of speculation, partly to the circumstances of an unhappy life (1568—1639). A born Neapolitan like most Italian philosophers, Campanella entered the Dominican order in his youth, was accused of conspiring against the Spanish government and thrown into prison, where he spent the twenty-seven best years of his life, in the course of which he underwent the torture seven times. It was in these untoward circumstances that most of his works were written, with the fear of the Inquisition no less than of the foreign tyrants before his eyes. A natural vein of religious mysticism not unmingled with charlatanism was intensified by long seclusion from the world, by bodily suffering, by hope deferred. To conciliate his judges and to procure the intercession of the Pope he made concessions to authority which ended by being half-sincere. When at last set free and provided with an asylum in France the bent of his mind was irrevocably determined in a direction widely diverging from that of modern civilisation.

The philosophy of the Italian Renaissance never transcended the limitations or added to the categories of Greek thought; but those limits included the whole field of naturalism, and those categories were so numerous that an appearance of originality might be produced by shuffling them into new combinations. When the Florentine Academy had temporarily broken the yoke of Aristotle not only Plato but the earlier and later physical systems began to be studied afresh and were powerfully aided by the Copernican astronomy. In time Aristotle reasserted his authority, but he was now read with other eyes and found to be on one side of his activity the father of systematised observation, and of inductive science. On the other side as a metaphysician he was a chief factor in Neo-Platonism, the religious mysticism of which blended easily with the great spiritual movement provoked by the Reformation.

All these elements met and mingled in Campanella, but with an increasing preponderance of those which made for theological interests. In him, as Dr Felici well observes, is repeated the general movement of Italian Renaissance thought. First he is attracted by the study of nature, then by the study of Mind. Psychology replaces physics (p. 45). As might be expected, Aristotle, whom he had so passionately assailed, now becomes his guide. He adopts the famous distinction between soul and reason or nous, using the latter as an organ for the apprehension of religious truth. Religion is in fact the tendency of the mind to expand itself to infinity (p. 138). Think away all the limitations of Mind and you arrive at an infinite substance which is God. As the universal principle this substance is Power; as conscious of itself it is Wisdom; as self-delighted it is Love. Here we have the celebrated "Primalities" of Campanella—and with them we find ourselves back in medievalism. Creation is not so much out of nothing as a combination of the supreme principle with nothing—a subjection of the Infinite to a series of restrictions and negations constituting a descending chain of partial existences from the throne of God to the verge of nonentity. What chiefly differentiates Campanella from the Neo-Platonists seems to be his substitution of the Infinite for the One, a process due, I think, to the revived Epicureanism of the Renaissance, such as we can study best in Giordano Bruno. Whether he was really more orthodox than his martyred predecessor may be doubted. Dr Felici institutes an elaborate and instructive comparison between the two Dominicans going to prove that Bruno valued the popular religion as very useful for the morals of the uneducated classes although untrue in

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itself, while Campanella interpreted its dogmas as a historical manifestation of metaphysical truth, and therefore themselves a part of the great cosmic process, the self-evolution of the Infinite in nature and man (pp. 210–216). According to his critic Campanella "pantheizes," but is not simply pantheistic, believing as he does in a deity which though immanent in nature also transcends it. Whether this deity is or is not personal seems left undetermined. In no case is his religion supernatural in the sense of being miraculously revealed, and his exclusion of every specifically Christian dogma is complete. "What need of a 'new creature' if human nature tends by virtue of an inborn and necessary inclination towards the highest good?" (p. 145). Campanella in his *Atheismus Triumphatus* declares that "the chief merit of Jesus Christ consisted in preaching the simplest form of natural religion to men and aiding them to conform to it. His death had no higher value than that of a luminous example 'moriendi pro ratione'" (p. 221). But natural religion is as we have seen merely the tendency of the mind to expand itself to infinity, which again is the supreme form of that self-preservation which our philosopher borrows from Stoicism as the definition of virtue (p. 134).

Like the Stoics also—a derivation which Dr Felici does not notice—Campanella looked forward to the eventual union of all mankind in one fold under one shepherd; but, strange as it may seem, his fold was the Roman Catholic Church and his shepherd was the Pope. Like the ancient thinkers he regarded history as a series of recurring cycles, and Dr Felici has shown that to credit him with anticipating the modern idea of perpetual progress is a mistake (p. 170). But the sweep of the cycles was to go on expanding until the whole globe was reduced under the sway of a single theocratic despotism. The great discoveries and inventions of modern times had no other value or meaning in his eyes than as steps towards this consummation, which remained his ideal through life, the only change being that in his youth he looked on Spain, and in his later years on France, as the predestined instrument for its accomplishment. His illusions about the desirability and feasibility of establishing papal supremacy over the secular monarchies are worthy of the thirteenth century, and remain totally unaffected by the Reformation. Protestantism he would have suppressed by any means however violent or fraudulent, and we are told that his unscrupulousness in this respect leaves Machiavelli far behind (p. 238).

Thus the last thinker of the Italian Renaissance exhibits with extraordinary clearness the pervading note of Italian thought, the dream of universal empire, that legacy from old Rome which has been the inspiration of so many great Italians, from Dante to Vico, from Rienzi to Buonaparte, from Gregory VII. to Leo XIII.

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VIII.—PHILOSOPHICAL PERIODICALS.

BRAIN. Parts LXX., LXXI. and LXXII. 1895. **Sir William Broadbent.** 'Brain Origin.' [Speculations on the nature of nervous processes.] **A. D. Waller.** 'Points relating to the Weber-Fechner law. Retina; Muscle; Nerve.' [Relation between intensity of light thrown into frog's eye and amount of negative variation of current between optic nerve and cornea; between strength of induction shock from condenser and lift of muscle; between strength of tetanising current applied to nerve and amount of negative variation of nerve. Logarithmic relation in first and second cases, direct proportionality in the case of nerve.] **A. E. Wright.** 'On the nature of the physiological element in emotion.' [Speculations on "neural tension" as chief element in emotion; analogy of segment of nervous system with water cistern; overflowing into viscera.] Discussion on 'Imperative ideas,' by **Dr Hughlings Jackson, G. H. Savage, C. Mercier** and **J. Milne Bramwell.** **L. Bianchi.** 'The functions of the Frontal Lobes.' [Experiments showing psychical defect after extirpation of frontal lobes in monkeys and dogs. Affections of trunk movements not constant and when present transitory.]

PHILOSOPHICAL REVIEW. Vol. v. No. 1. **A. Hodder.** 'Truth and the Tests of Truth.' [No warrant for the ascription of truth to our beliefs is given by induction, deduction, intuition, memory or inference. Truth is a certain sort of stability or predominance. As 'aids to reflection' in the pursuit of truth the collective intelligence has thrown off five logical devices.] **E. Albee.** 'The Relation of Shaftesbury and Hutcheson to Utilitarianism.' [Hutcheson's relation is much the nearer. Both systems—carefully appreciated by the writer—suffer by comparison with a type of ethical theory under which they do not properly fall.] **T. W Taylor.** 'The Conception of Morality in Jurisprudence.' [The jurist conceives of the law as absolute, and of morality as a code of rules. While this conception may suffice for the judge, the theoretical jurist must base his theory upon a sounder ethics.] **J. H. Tufts.** 'Refutations of Idealism in the "Lose Blätter."' Discussion: **W. M. Daniels.** 'Mr Balfour's Criticism of Transcendental Idealism.' Reviews of Books. Summaries of Articles. Notices of New Books. Notes: **H. N. Gardiner.** 'Recent Discussion of Emotion.'

PSYCHOLOGICAL REVIEW. Vol. III. No. 1. **G. S. Fullerton.** 'Psychology and Physiology.' [Criticism of physiological usage (Foster) of psychological concepts. Warning to psychologists not to follow physiology for physiology's sake.] **H. Münsterberg.** 'Studies from the Harvard Psychological Laboratory. (III.)' (1) **W. G. Smith.** 'The Place of Repetition in Memory.' [The results "confirm in general the accepted

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fact of the efficacy of continued repetition in impressing any kind of subject-matter on the memory." No definite connexion is traceable between excellence of memory and mode of reproduction.] (2) **M. W. Calkins.** 'Association. (II.)' [Frequency is the most constant condition of suggestibility. It is compared with recency, vividness and primacy.] (3) **L. M. Solomons.** 'The Saturation of Colours.' [Colours vary in colour-tone, saturation, intensity and blackness. The saturation of a mixture of colour and white is independent of the intensity and of the quantity of colour, and depends only on the ratio of the colour to the white.] (4) **J. B. Hylan.** 'Fluctuations of the Attention. (I.)' [Oscillation of two grey spots, indirectly seen, with varying direction of attention. Oscillations of touch and temperature sensations.] Discussion and Reports. **C. A. Strong.** 'Physical Pain and Pain Nerves.' [Reply to Marshall and Nichols.] **J. Jastrow.** 'Community of Ideas of Men and Women.' [Remarks on the Wellesley College results. The contradiction of the writer's by them is only apparent.] **C. L. Franklin.** 'The Function of the Rods of the Retina.' [von Kries has ignored the writer's priority in the hypothesis that the rods are the organs of brightness sensation.] **W. M. Urban.** 'Something more about the "Prospective Reference" of Mind.' **J. H. Hyslop.** 'Our Localisation in Space.' [Two cases of mistaken apprehension of situation.] **W. Lay.** 'Three cases of Synæsthesia.' Psychological Literature. Notes.

AMERICAN JOURNAL OF PSYCHOLOGY. Vol. VII. No. 2. **C. A. Scott.** 'Sex and Art.' [Bases "the connection on the one hand, the equivalence and interchangeability on the other, of the sexual passions (including the anger-fears) and the more intellectual instincts of art, religion, and the interests and enthusiasms generally, upon the fundamental quality of erethism found in every animal cell. The psychological expression of this bodily state is traced from its simplest manifestation, through animal combat and courting, the courting of the lower races, and the ensuing and accompanying religious, dramatic, and otherwise symbolic phenomena of phallicism (all to be regarded as essentially subdivisions of courting) to the more complex conditions of modern times.... Modern art is represented as being the psychical expression of an erethism which is an equivalent, and historically a derivative, of that of sex." An important paper, whose chief defects are a too great reliance upon secondary authorities, and a too unhesitating acceptance of biological theory as biological fact.] **H. Griffing.** 'On the Development of Visual Perception and Attention.' [Experiments on school-children regarding the range of visual attention (extensive limen of attention). The range is a function of individual growth. The chief value of the results lies, as the writer sees, in the indications they give of the complexity and difficulty of the subject investigated.] **A. Allin.** 'The "Recognition Theory" of Perception.' [Criticism of the doctrine of Höffding, Wundt, Sully, Spencer, Ward, etc., etc.] **A. Allin.** 'Recognition.' [Somewhat disjointed remarks upon the process of recognition in general. Good points made are that a centrally excited sensation is not necessarily memorial, that recognition is of the object and not of the sensation, etc. Both papers should be read in connexion with the writer's doctorate thesis: *Ueber das Grundprincip der Association* (physiological continuity).] Reviews. Notes.

REVUE PHILOSOPHIQUE. Vingtième Année, No. 11 (Novembre, 1895). **B. Perez.** 'Le Développement des idées abstraites chez l'enfant.' [Discusses, with abundant examples, the best mode of training children in the use of general terms. The method is in substance that of Socrates,

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modified to suit the requirements of the child-mind.] **A. Forel.** 'Activité cérébrale et conscience.' [Maintains, as against M. Jules Soury, that we ought to distinguish sharply between consciousness and mere formal subjective attitude, and the special content of consciousness with its various modifications.] **G. Richard.** 'La Sociologie ethnographique et l'Histoire: leur opposition et leur conciliation.' [The essential data of Sociology are historical rather than ethnographical. The ethnographical data possess value only in so far as they can be brought into connexion with historical. Two general doctrines attributed to those sociologists who rely mainly on Ethnography, are subjected to a searching criticism,—the doctrine that only war and conquest have produced high social organisation of extensive communities, and the doctrine that industrial and intellectual civilisation can in the first instance develop only in states of this type. An important and instructive article.] **H. Lachelier.** 'La Théorie de l'induction d'après Sigwart. (I.)' [Contains an exposition of Sigwart's general theory of knowledge, of his account of the essential nature of inductive reasoning, and of the determination, first of concepts and secondly of laws, by inductive process.] Analyses et comptes rendus, &c.

No. 12 (Décembre, 1895). **J. Soury.** 'Le lobe occipital et la vision mentale.' **H. Lachelier.** 'La Théorie de l'induction d'après Sigwart. (Fin.)' [Discusses Sigwart's account of the application of the inductive method in Psychology. In summing up, M. Lachelier notes three points as of primary importance in Sigwart's general philosophy: (1) The mode in which the mind explains and comprehends reality is prescribed for it, not by the external world, but by its own nature. (2) The world which thought endeavours to render intelligible, is not the totality of our representations; it is a world of realities which are independent of us and exercise causal action, not only on each other, but on our mind. Though these realities are distinct in existence from the mind, and have their own laws, while the mind has its own laws, the mind can nevertheless understand them. Their laws are therefore in harmony with the laws of our thought. (3) Mental and material process determine each other in the way of interaction, and are not merely parallel. M. Lachelier urges that both the harmony of the laws of thought and the laws of reality, and the interaction between mind and matter, presuppose identity of nature. He also states a dilemma. We must choose between two conceptions of the relation between mind and reality; either we know nothing *a priori*, or we know prior to experience everything which can render experience intelligible. He also criticises the theory that mind and body interact, on the ground that, if they are alike in nature, there can be no essential difference between the action of bodies on one another, and the interaction between material atoms and the mind.] Revue Critique: **E. Durkheim.** 'L'Origine du mariage d'après Westermarck.' [The value of Westermarck's work is marred by his failure to analyse the conception of marriage, so as to give it a definition which has real sociological significance. Permanent union is not marriage unless its permanence is secured by the formal sanction of society. Durkheim holds with evident reason that marriage and what we call the family, did not exist in the most primitive society.]

Vingt-et-Unième Année, No. 1 (Janvier, 1896). **A. Fouillée.** 'L'hégémonie de la science et de la philosophie.' [In France, England, Germany, and America, there is at the present day a tendency to disparage science and philosophy as inadequate to the needs of humanity. The view taken seems to be that, though science may be a good servant, it is a bad master. M. Fouillée maintains, in opposition to this movement, the hegemony of science and philosophy; only we must, according to him, take a higher view of the nature and function of science. Philosophy and science are

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not only speculations, they are modes of human activity; and they ought to become so in a still higher degree. The truth after which we are to seek must be a harmony of actions and ideas.] **R. Egger.** 'Le moi des mourants.' [Discusses the cases in which persons suddenly confronted with death review the events of their life as a whole. A psychological explanation is suggested.] Observations et Documents: **Ch. Féré.** 'Le langage réflexe.' **Duprat.** 'Expériences sur une illusion visuelle normale.' Revue Générale, &c.

Revue de Métaphysique et de Morale.—4e Année, No. 1.—Janvier, 1896. **E. Bataillon.** 'Louis Pasteur.' [An encomiastic article on the late M. Pasteur which will, we have no doubt, be interesting to Biologists and Physiologists, and indeed to all who like to read of one who was a great man of science, though not a philosopher.] **L. Weber.** 'Idées concrètes et images sensibles.' [There is a class of ideas which one may term 'singular ideas,' related to singular objects—unique in their kind—denoted by proper names. These 'singular' ideas possess a reality independent of the image of the person referred to by the proper name. What is the nature of the idea itself? The essay then proceeds to answer this question. The word 'idea' being explained, it is stated that the *external* world, the world of beings and real events, is composed of 'ideas,' signified by words, as the *ideal* world is composed of concepts and abstractions. There is a Real which is unknowable; but it is not substance, not thing-*per-se*, not absolute. The form in which our intelligence and reason realise themselves precludes the possibility of ever knowing it. A highly mystical piece of metaphysics.] **G. Noël.** 'La Logique de Hegel.' [Hegel is not, like Descartes and Kant, one who would revolutionise thinking, or break with the past. Rather, he would make the history of systems show that all are part of one system in which thought is evolving. Yet Hegelianism is not eclecticism. Neither is it a return to the dogmatism condemned by Kant, especially, as some say, to that of Spinoza. Noël investigates the questions, first, how far Hegel deserves to be called a Spinozist, and second, whether he has been unfaithful to the fundamental thought of 'criticism.' He defends him against both charges, and ends by declaring that we must either advance beyond Kant to Hegel, or go back again to the position of Hume. These articles of Noël on Hegel and his critics are interesting, not only for their own sakes, but also as indicating how largely the philosophy of Germany —or what for some decades had been so—*par excellence* has fascinated the French mind, while there seems to be at present passing over German speculation a wave of influence derived from the positivism of France.] **F. Halévy.** 'Travaux récents relatifs à Socrate.' Questions pratiques, &c.

Revue Néo-Scolastique. Février, 1896. **Dr H. Hallez.** 'Le temps et la durée.' [Dr Hallez, in the course of a very ingenious but perhaps somewhat paradoxical paper, maintains that time is a sensible image representative of concrete duration.] **Domet de Vorges.** 'L'objectivité de la connaissance intellectuelle.' [M. Domet de Vorges, though little known in England, has achieved much reputation in France as one of the ablest among the many able men who are endeavouring to revive the study of Scholasticism in that country. In the present article M. de Vorges is less concerned to establish the objective value of intellectual knowledge than to determine the mind of St Thomas on this question. The article is in consequence primarily of historical interest. Still it contains much that deserves the attention of the student of philosophy.] **G. de Craene.** 'Nos représentations sensibles intérieures.' [M. Taine's treatise *De l'Intelligence* has provoked much discussion in France and has elicited many replies

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from the advocates of 'la philosophie spiritualiste.' Amongst these replies is one from M. de Craene which is now in the Press. The present article is an extract from that reply, published in advance.] **Ch. Sentroul.** 'Le Socialisme et la question agraire.' [M. Sentroul, in an article of some interest, discusses the attitude towards the land question of the various Socialist Congresses.]

As an appendix to the *Revue Néo-Scolastique*, there is published what would seem to be an exhaustive list of treatises and articles bearing on Philosophy that have recently appeared on the Continent and in England.

ZEITSCHRIFT FÜR PHILOSOPHIE UND PHILOSOPHISCHE KRITIK. Neue Folge, Band 107, Heft 2. **H. Siebeck.** 'Platon als Kritiker aristotelisches Ansichten: der *Philebus*.' [This is a continuation, with reference to the *Philebus*, of an attempt made by Siebeck in a former article, with reference to the *Parmenides*, to show that Plato criticised certain of Aristotle's views published during his master's lifetime—a fact in which we may find a clue to the interpretation of some of the Platonic dialogues. "The *Protrepticus* (one of the earliest Aristotelean writings) may be regarded as having been the immediate motive for the composition of the *Philebus*." Dr Siebeck, as was to be expected, defends his position with a wealth of learning and ingenuity, and these articles are very original and suggestive.] **Julius Bergmann.** 'Ueber Glaube und Gewissheit.' [This paper seeks to answer the question—wherein consists the certainty which belongs to faith in the stricter sense? and leads to the conclusions (*a*) that the understanding, or reason, alone can decide whether anything is true or untrue, certain or uncertain; (*b*) yet that a belief possessing certainty which is not knowledge, but an anticipation of knowledge, is possible; (*c*) and that the 'heart' (Gemüth) exerts an influence upon the understanding, and shows it the way to knowledge.] **Georg Simmel.** 'Friedrich Nietzsche: eine moral-philosophische Silhouette.' **Matthias Sklávik.** 'Zur Geschichte und Litteratur der Philosophie in Ungarn.' **Josef Müller.** 'Das Erinnern.' ["In the process called 'recollecting' ideas are not fetched back from the unconscious and then arrayed in the garb of consciousness: they have not really expired at all: they were only pushed aside, a little, by the rushing stream of the mental life; they do not, again, spring up of themselves—they have no such independence—but the Soul accomplishes this, reproducing them, according to its interest in them, and in conformity with the laws of Similarity and Contiguity. Hence the Logic of Memory. It takes a deeper hold of Rules than of examples: forgets names before facts: parts before the whole, &c. The 'Ich' is no 'hook,' on which thoughts are simply hung; it is the active, ordering, principle in all mental functions; only many a piece of business is transacted in certain inferior offices and by-apartments, which however are all under the supervision of the general management and with it make up the united personality. Hence to 'recollect' is (1) to observe or notice, not to revivify or create; (2) it is a logical judgment which, like every act of thought, can err, so that there may be a false memory; (3) it is an act of the united Soul, to which as its accidents the ideas adhere." An interesting article, which—whatever we may think of the writer's conclusions—seems to have been written by one who is competently acquainted with the best and latest works on the subject of Memory.] **Karl Vorländer.** 'Demokrit's ethische Fragmente, ins Deutsche übertragen.' [A piece of work of permanent value for the student, which only want of space prevents us from noticing at length.] Recensionen, Notizen, &c.

KRAEPELIN'S PSYCHOLOGISCHE ARBEITEN. Bd. I., Heft 2 and 3. **G. Aschaffenburg.** 'Experimentelle Studien über Associationen.' [Experi-

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ments on the associations occurring in response to given words with and without time measurement. Qualitative analysis of associations, using a modification of Wundt's classification. Individual differences in character and grammatical form of associated words. Ideas common to different individuals noted. Scheme for classification at end of paper.] **E. Amberg.** 'Ueber den Einfluss von Arbeitspausen auf die geistige Leistungsfähigkeit.' [Chief result that a pause of 15 minutes in the middle of an hour's mental work has a less beneficial effect than one of five minutes. Difference ascribed to loss of a factor in the former case which is termed "Anregung." This is a name for the process by which the inertia of the organism on beginning work is overcome and is regarded as furnishing a third important factor in addition to fatigue and practice in determining the form of a curve of mental work.] **A. Hoch** and **E. Kraepelin.** 'Ueber die Wirkung der Theebestandtheile auf körperliche und geistige Arbeit.' [Investigation by means of ergograph and addition method on respective influence of caffein and ethereal oils of tea. Describes a modification of Mosso ergograph. Chief results that favourable influence of caffein on muscle work is due to direct action on muscle substance. Unfavourable effect of ethereal oils central. Beneficial effect of both on process of association. The paper contains important contributions to methods of estimating effects of practice, fatigue, and "Anregung," of analysing muscle fatigue curves, of examining individual differences in capacity for mental work, etc.]

VIERTELJAHRSSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE. Jahrgang XIX., Heft 4. **J. Kodis.** 'Die Anwendung des Functionsbegriffes auf die Beschreibung der Erfahrung.' **A. Ploetz.** 'Ableitung einer Rassenhygiene und ihre Beziehungen zur Ethik.' **F. Blei.** 'Die Metaphysik in der Nationalökonomie.' **R. Wlassak.** 'Bemerkungen zur allgemeinen Physiologie.' Anzeigen, &c.

ZEITSCHR. F. PSYCH. U. PHYSIOL. D. SINNESORGANE. Bd. IX. Heft 3 and 4. **H. Ebbinghaus.** 'Ueber erklärende und beschreibende Psychologie.' [Dilthey has laid it down, in his *Ideen über eine beschreibende und zergliedernde Psychologie*, that psychology can never be more than descriptive and analytic, and that recent attempts to make it explanatory and constructive are wrong in principle and have led to nothing but confusion of opinion in fact. The writer shows that Dilthey's polemic does not touch the 'explanatory' psychologists, with the possible exception of Herbart—who is 'very, very dead'; that many of the rules laid down are recognized as overtly by explanatory psychology as they could be by a descriptive psychology planned after Dilthey's suggestions; and that Dilthey has failed—as explanatory psychology has not failed—to see where the real difficulty of psychology lies.] **G. Simmel.** 'Skizze einer Willenstheorie.' [Action does not follow upon will or impulse: will is the 'conscious aspect,' the 'feeling reflection' of the first stage in the processes of innervation which culminate in bodily action; *i.e.* it is the conscious representation of action begun.] **G. Heymans.** 'Quantitative Untersuchungen über das "optische Paradoxon."' [Quantitative experiments upon various forms of the arrow head and feather (Müller-Lyer) illusion. Explanation in terms of eye-movement, based upon the explanations of Wundt and Delbœuf.] Besprechungen. [Review of Höffding's Psychology by Höfler, etc.] Litteraturbericht. Berichtigung.

Bd. IX. Heft 5 and 6. **Karl Groos.** 'Zum Problem der unbewussten Zeitschätzung.' [The phenomena to be explained are those of waking regularly at the same hour, of post-hypnotic execution of commands the

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time of which was suggested only in the abstract, etc. The author believes that attention is always an expectation, never a realisation; and that there are three forms of it,—motor (expectation of an instinctive or voluntary movement); theoretic (of an ideational connexion); and æsthetic (of an enjoyment). He is thus able to refer the time estimations to unconscious or subconscious attention.] **S. Ottolenghi.** 'Das Gefühl und das Alter.' [General sensibility (measured by the interrupted current) is fairly well developed in children. It reaches its maximum in adult life, differing, however, with occupation, degeneration, etc. It decreases again in old age. Pain sensitivity is very little developed in children, reaches a maximum in adult life, and decreases but little with old age.] **W. Heinrich.** 'Die Aufmerksamkeit und die Funktion der Sinnesorgane. (I.)' [If objects in the lateral field of vision are attended to, the accommodation of the eye changes: Helmholtz' statement to the contrary is incorrect. During attention to non-visual impressions, the eye is unaccommodated. The ocular changes stand in a direct correlation with the phenomena of attention. Oscillations of visual attention can be adequately explained from peripheral causes.] Litteraturbericht. Bibliographie der psychophysiologischen Litteratur des Jahres 1894. [1504 titles.] Berichtigung.

Bd. x. Heft 1 and 2. **G. E. Müller.** 'Zur Psychophysik der Gesichtsempfindungen. (I.)' [Seeks to modify the theory of antagonistic colours in such a way as to render unnecessary the statement of its author (Hering) that "psychophysical processes of very different magnitude may give the same sensation, since everything depends not upon the absolute magnitude of these processes, but upon their mutual relation." Five psychophysical axioms are formulated. (1) Every conscious state has as its substrate a material (psychophysical) process. (2) Likeness and difference of sensations correspond to likeness and difference of nature in the psychophysical processes, and *vice versa*. (3) Alteration in a given direction on either side means alteration in the same direction on the other. (4) Qualitative or intensive changes on either side mean qualitative or intensive changes on the other. (5) The fifth axiom is a determination, in the shape of a functional formula, of the relation of a mixed sensation (quality) to its component simple sensations (intensity and quality). The writer goes on to discuss the intensity and power of sensations, and qualitative sensation series and their psychical representation. Then, making special applications of his conclusions to the sense of sight, he deduces the six retinal 'fundamental processes,' which agree with those assumed by Hering. The position of the six fundamental colours in the colour system is next examined, with especial reference to language (Wundt, etc.).] **Guillery.** 'Ueber das Augenmass der seitlichen Netzhauttheile.' [There is no essential difference between central and peripheral eye-measurement. Weber's law does not hold for peripheral.] **A. Höfler.** 'Krümmungskontrast.' [A case of architectural curvature-contrast, which hardly admits of the possibility of explanation by a physiological theory (Hering). Suggestion of explanation in terms of the distinction of primary (given) and consolidated contents (Meinong).] Litteraturbericht. Berichtigung.

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IX.—NOTES.

REPLY TO A CRITICISM.

I AM sorry that it should be in *Mind* that I again violate my rule never to reply to book-reviews, for nowhere else did I ever do it: but I find in Prof. Sully's notice of my book on *Mental Development* in the last number some things on which our common readers should be set right. Passing over the 'moral' charges which Prof. Sully finds it in his province to make—which will do no objective harm, I hope; but may do me subjective good—I wish to state a point or two in answer to Prof. Sully's criticisms of the actual teachings of my book.

He makes the general charge that I do not credit other (save American) writers sufficiently; and says, apropos of the charge, that my reference to Wundt on the attention is inadequate: that my theory is 'strikingly similar in its essentials' to Wundt's "well-known view." To this I say: So far from being 'strikingly similar' to any one of the phases of his theory which Wundt has developed in his different editions, it is nearer to the theories of the Münsterberg-Lange type: and either Prof. Sully does not know his Wundt or he has not read with care the book he is criticising. A little work just published by Heinrich[1] will bear (cautious) citation on Wundt's theories of the attention.

Again, in criticising my experiments on the color-*perception* of infants, he mistakes the problem I set myself, thinking that I mean color-preference and color-discrimination, in spite of detailed criticisms of mine directed *precisely* against this confusion[2]. He thinks that I showed two colors simultaneously to the child; while in my book I say: "On this second rod the colors were placed *in succession*, the object being to excite the child to reach for *the color*" (singular, not plural: Italics put in now). p. 51. Prof. Sully has repeated this criticism more explicitly in other places and now publishes it again in his book.

As to the 'novelty' of my use of the word 'suggestion' Prof. Sully would have done well to quote the whole of my definition instead of half of it; I go on to say: "and it is typified by the abrupt entrance from without into consciousness of an idea or image &c."—and this is separated only by a comma from the part quoted by Prof. Sully. And it might have been fairer also to refer to the sections in which I compare and comment on four other views. Moreover, reference to the English authorities whose absence from the foot-notes of the book my critic so much deplores will show him that my whole chapter on suggestion is based on a view similar

[1] *Die moderne physiolog. Psychologie in Deutschland*, p. 80.
[2] *Ment. Devel.* p. 39 f.

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to that given in Tuke's *Dictionary of Psychological Medicine*[1]—the common view developed by Bernheim, to whom I directly refer.

These cases are enough to show the depth of the review. The criticisms of my views on 'imitation,' 'volition,' &c. are just as superficial. For example—again at random—take volition. Prof. Sully says: "In truth the writer seems himself to see that imitation is not the only, if indeed the chief source of volition, when he writes, &c."; and does not hint at the long argument (pp. 426 ff.) in which I deal with the very instance which he goes on to cite, and show that it illustrates one of the main distinctions—that between ontogeny and phylogeny in development—which my book aims to make good. In this case he seems to me to proceed by insinuation entirely.

Indeed the whole performance, as I can not help thinking, comes back to its point of origin, certain moral charges.

Now I may only ask whether it is a sufficient or a competent bid for the reader's prejudgment to say that I am a 'young American,' 'impatient for ideas more than a year old,' and deal in 'curious diagrams.' And then I may suggest the consideration that confessed 'irritation' is not a good psychosis from which to write things for a journal of the reputation of *Mind*,—all of which Prof. Sully's own better taste would seem to confirm by this sentence: "I have felt bound to enlarge on these obstacles which the author has put in the way of a clear understanding and a fair estimate of his book; for it is quite possible that I have not surmounted them and that the opinion of the work which I have done my best to form may turn out to involve a certain amount of misapprehension."

J. Mark Baldwin.

A few words will, I think, suffice by way of rejoinder to Prof. Baldwin's objections to my review of his book.

(1) On reperusing his account of the mechanism of attention in increasing the intensity of sensations I agree with him that his theory is not 'strikingly similar' to that of Wundt as I had erroneously said. But the author is, I think, responsible for my error. In the note which I refer to, when quoting from a letter of Prof. Höffding (*Mental Development*, p. 463) a view of the matter which appeared and still appears to me essentially similar to that of Wundt, he uses with respect to this view the words "which clearly takes the same ground as to the cause of heightened intensities" (as his own). Taking his own interpretation of Höffding's view as correct I naturally wondered at his merely referring to Höffding's allusion to Wundt rather than appealing to Wundt directly.

(2) I did not, as Prof. Baldwin says that I did, speak of his showing two colours to his child simultaneously. My words were (*Mind*, V. N. S. pp. 98, 99): "by presenting successively in suitable situations certain colours." If I have elsewhere made the mistake which he speaks of, I will correct it: though I fail to see what it has to do with the point of my criticism.

(3) In quoting Prof. Baldwin's definition of suggestion I completed the definition as quoted by himself from an article of his own in *Science*. He complains that I did not go on and quote another quotation also from himself which does not fall grammatically under the words: "I have myself defined suggestion," but is introduced by the words: "and it is typified etc." I fail to see Prof. Baldwin's grievance. For the rest

[1] Art. *Suggestion*. See also Tuke's *Influence of the Mind on the Body*.

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it seems to me that Prof. Baldwin's present contention that his view of the process of suggestion is based on another view reads oddly after the chapter referred to (Chap. VI.), which after reading it again in the light of the above note still seems to me to make a very distinct claim of originality for what the writer expressly calls "my view."

(4) With respect to Prof. Baldwin's objections to my criticism of his theory of Imitation I am ready to allow that the words I used, "seems himself to see," hardly do justice to his position. My point was that after trying apparently to make imitation serve as the single source of volition in individual development he finds himself compelled to allow something to that play of chance or accident which, as I understand him, he had before been so resolutely excluding. I did not mean to say that he made these concessions inadvertently, though I now see that my language might bear this interpretation.

(5) I have brought no "moral charges" against Prof. Baldwin. I spoke of moral *difficulties* so as to distinguish them from the intellectual ones dealt with in the first paragraph of my review. The phrase, I should have supposed, was sufficiently clear. If Prof. Baldwin prefers to give extracts from his own previously published and accessible books much more frequently than extracts from any other authority he is likely to raise a prejudice in people whom he might regard as weakly old-fashioned. Such a prejudice would constitute a moral as distinguished from an intellectual difficulty in the way of those persons' comprehension of his meaning; though they would not of course be justified on the ground of this difficulty in accusing him of not being moral. I can only express regret that any words of mine could have seemed to Prof. Baldwin to imply moral charges.

As to Prof. Baldwin's remarks on my confession of a sense of these difficulties and (by implication) of a certain feeling of irritation, I cannot see how this unfortunate experience of mine amounts to a hardship for Prof. Baldwin. Does he mean to suggest that when a reviewer feels difficulties of this kind he ought to retire in favour of somebody less squeamish? And is he as an editor of opinion that such an arrangement would best conduce to the true interests of Science?

J. SULLY.

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PSYCHOLOGY AND PHILOSOPHY.

I.—ON THE INTERPRETATION OF PLATO'S *PARMENIDES*. (I.)

BY A. E. TAYLOR.

FEW monuments of antiquity have provoked and continue to provoke so much discussion as the *Parmenides* of Plato. There is hardly any question, whether of fact or of interpretation, raised by this dialogue upon which the most divergent opinions have not been held by equally competent authorities. Its authenticity has been seriously impugned, and perhaps not altogether without reason; it has been doubted whether we have in this dialogue one of the earliest or one of the latest of the Platonic writings: the most varying estimates have been formed of its worth, whether as a source for the understanding of Platonism and early Greek philosophy in general, or as an independent contribution to speculation. While, to come to what will be almost exclusively the subject of the present essay, there has been no less dissension as to the design and argument of the dialogue itself. To mention only a few typical views, we find that ancient and modern Neo-Platonists have discovered a mine of theologic treasure in what was to the less credulous Grote a mere tissue of ingenious paradoxes less amusing if more subtle than the riddle of the "man and no-man" in the *Republic*. Another and a more accredited view sees in the argumentation of the first part and the puzzles of the second a restatement by Plato of Megarian objections to the doctrine of Ideas met by a counter-demonstration of the equal unsatisfactoriness of the Megarian "One."

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A third school of interpreters on the contrary treat the objections to the ideal doctrine as first formulated as perfectly serious, and see in the hypotheses, not a mere turning of the tables upon an opponent too able to be directly refuted, but the foundation of a newer and sounder ideal theory. Lastly, it has even been suggested, (by Stallbaum), that the main object of the present dialogue is not so much to prove a thesis as to present, in the form of a pendent to the *Sophistes* and *Politicus*, that companion sketch of the philosopher philosophizing which Plato had promised in *Politicus* p. 257.

Distressing as such universal uncertainty and confusion may be, it perhaps serves to make things easier for one who would contribute in his modest way to the better understanding of this dialogue. Where all is dark even a rushlight may be of some service, and it is the very great obscurity in which the whole subject still remains which has given me the courage to hope that even the humble task of analysing the argument of the *Parmenides* might not be without its reward. Accordingly I propose to abstain as far as may be from excursions into fields of learning where I am only too conscious that I should be an intruder. I shall offer no new theory about the date of the *Parmenides* nor about its connection with the school of Megara, nor shall I have anything to say except incidentally on the general character of Plato's philosophy. The task I have set before me is a far simpler one, though I venture to think that until it has been performed it is premature to raise these vaster issues. The question I shall attempt in some degree to answer is no more than this. Can we discover under the apparent incoherence of our dialogue any one leading conception by the help of which its puzzles may be reduced to simplicity? What right I have for thinking that this question can be answered in the affirmative I must leave the reader to judge. We have first then to ask ourselves which of the four or five classes of theory as to the purpose of our dialogue is likely to be correct. If Grote be right in regarding the greater part of the dialogue as mere ingenious exercises in the art of puzzle-construction, it is clear that time spent in a detailed analysis of its peculiarities would be simply wasted, and our wisest course would be to dismiss the hypotheses as having no more value and less interest than a conundrum or a chess problem. Such a view cannot from the nature of the case be refuted except in one way, *viz.*, by the *de facto* establishment of a coherent interpretation of the dialogue as a whole—and this is all the refutation I propose to bestow on it: it must however be remembered that while any success refutes Grote one more failure affords his theory no appreciable additional support.

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It will hardly be necessary for me to offer a formal disproof of that ancient view which sees in our dialogue a treatise of mystical theology. For it would be generally admitted now that Plato, like Hegel, has no secret doctrine, no esoteric sense, though unwise persons have often sought to discover one in both. It is most significant of the difference between the genuine philosopher and the charlatan that the abstract logic of the *Parmenides* is all we find when we look for a *disciplina arcani* in Plato's writings. The third view[1], at first sight more plausible, is really equally impossible. It is at least a very doubtful assumption that the *Parmenides* was written after the *Sophistes* and the *Politicus*. The references in *Theaetetus* 183 E and *Sophistes* 217 C, especially the latter, are more natural if understood of an already published work than of one yet to be composed. Indeed the commendation bestowed by Socrates on the discourse of Parmenides in *Soph.* 217 C would on Stallbaum's theory be a peculiarly offensive specimen of the art of "puff." Nor does the *Parmenides* in any way correspond to the missing *Philosophus*. It was not only Plato but the "stranger from Elea" who undertook to describe the philosopher, and we should naturally expect him to redeem his promise in person. And it would be a grave artistic blunder to append to the two dialogues in which the Eleate had defined the sophist and the statesman by the method of dichotomy a sequel containing a description of the philosopher by an entirely different person and a totally different method. The incredibility of this theory becomes still more patent when we remember the occurrence of an emphatic and express declaration of Plato in the *Politicus* (286 D) that the real interest of the discussion centres in the method of division by dichotomy, compared with which the definition of the statesman is only of secondary importance. This passage alone to my mind abso-

[1] For Stallbaum's defence of this view see his edition of the *Sophistes* pp. 52–54, with which compare pp. 128–131 of his edition of the *Politicus*. His response to the objection about the change of scene and *dramatis personæ*, that the Eleatic Stranger and the rest of the characters of the *Sophistes* may be *κωφὰ πρόσωπα* in the *Parmenides*, is hardly satisfactory. Was Socrates, we may well ask, one of the audience to whom Cephalus related at third hand the conversation between Parmenides and himself? Stallbaum's views on the date of the *Parmenides* seem never to have settled. In his separate edition of the dialogue he defends the order *Sophistes*, *Parmenides*, *Politicus*, which is also that of Zeller's *Platonische Studien*, and places all three before the *Republic*, *Timaeus*, *Laws*. In his editions of the *Sophistes* and *Politicus* the identification of the *Parmenides* with the *Philosophus* has led to the new arrangement *Sophistes*, *Politicus*, *Parmenides*; while lastly in his edition of the *Timaeus* p. 212 he makes, though diffidently enough, the strange suggestion that the proper place of the *Parmenides* is after the *Timaeus*.

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lutely excludes the idea that Plato can have published along with the *Politicus*, or in immediate sequence upon it, a third part in which διαίρεσις κατ' εἴδη disappears entirely and a wholly new process—the construction of antinomies—takes its place. And I believe I may safely add that the linguistic evidence is unfavourable to the belief that the *Parmenides* belongs to the *Sophistes* and *Politicus* group[1].

It would seem then that we are justified in believing, along with the majority of interpreters, that the main interest and purpose of the dialogue is metaphysical, and I think we may safely go a step further and say it is not the *method* of Parmenides—and in this the present dialogue is the very reverse of the *Sophistes* and *Politicus*—but his *results* to which Plato attaches supreme importance. The method is indeed no more than a simple and obvious extension of common-sense; Plato was not the man to present the statement that it is always advisable to examine all the consequences of admitting or denying a proposition to the world as a great philosophical discovery. The novelty lies not in the process of inference by which Parmenides comes to his conclusions, but in the startling and paradoxical character of the conclusions themselves. And it is not without some significance that there is no such express commendation of the method employed to be found in our dialogue as that which I have already cited from the *Politicus*. It is indeed warmly recommended, but only as a useful preliminary exercise and discipline for a philosophic but untutored spirit, not as an organon of matured speculation.

Assuming then that Plato intends us to extract some positive teaching from the negations and paradoxes of Parmenides, how are we to know whether our interpretation is on the right track? Fortunately the construction of the dialogue itself provides us with an answer to what would otherwise be a very awkward question. The dialogue *Parmenides* falls as is universally known into two well-defined and unequal parts which seem at first sight quite independent of each other. Such a want of connection would however be without a parallel in the rest of Plato, and, in the present case especially, it is flatly incredible that Parmenides should, after reducing Socrates to a state of hopeless perplexity by his criticisms of the Ideas, turn quietly to an entirely different subject without any attempt to answer the difficulties he has himself created. The case of the dialogues of search, where an investigation *consistently pursued throughout the conversation* nevertheless ends fruitlessly, is quite dissimilar. We have thus a test supplied by Plato himself of the correctness of our readings of the dialogue:

[1] See also p. 324.

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that interpretation will have the highest claim for acceptance which succeeds best in establishing an intimate and vital connection between the criticism of the Ideas in the first part of the dialogue and the results of the conflicting hypotheses in the second. To find in the antinomies of the last three quarters of the Parmenides the solution of the difficulties raised in the first quarter of it is, in brief, the problem with which we are now called upon to grapple. And in dealing with this somewhat difficult problem it will, I think, be best to adopt a procedure exactly contrary to that of Zeller in the *Platonische Studien*. We should start not from the second part of the dialogue but from the first; not from the ἓν and τἆλλα of the antinomies, but from the more familiar εἴδη and μέθεξις of the preliminary conversation between Socrates and Parmenides. For this first part of the dialogue sets the problem and pitches the key for the rest. Half the difficulty of the hypotheses is due to uncertainty as to the exact application of the extremely abstract terms with which they are concerned, and this uncertainty can only be overcome by a perfectly definite conception of the issues under discussion, which again can only be obtained by a careful analysis of the opening chapters of the dialogue. Everything thus depends on our understanding clearly what it is that Socrates puts forward as his first theory of Ideas, and on what points in the theory the strictures of Parmenides are passed. Accordingly I have no choice but to stake my whole reading of the dialogue on the correctness or incorrectness of the brief analysis of chapters 1—8 to which I now invite the reader's attention.

There is nothing in the introductory narrative which calls for detailed notice from our point of view, but I should like in passing to make one remark which has no special bearing on the present paper. Plato's repeated references almost compel us to accept, as I believe the majority of the commentators do, the meeting of Socrates and Parmenides as historical fact. But it is quite certain that on that historic occasion the actual Parmenides must have discoursed not, like his Platonic representative, of metaphysics, but of physics[1] pure and simple. Hence the presence at the discussion of the youthful Socrates seems conclusive proof that at that period at least he had not come to regard physical speculation with the contempt which he afterwards professed for it, and the *Parmenides*, like the *Cratylus*, affords valuable and unexpected evidence to the general truth of the Aristophanic as against the Xenophontic portrait of the philosopher.

[1] I use the term approximately in the Aristotelian sense. In a wider sense Parmenides might be called the founder of metaphysical criticism.

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To return however to our main argument. It will be remembered that the starting-point of the discussion lies in the paradoxes of Zeno. The object of these ingenious puzzles was, as is well known, to establish the Eleatic doctrine of the simplicity of real being indirectly by shewing the absurdities which follow from assuming a plurality of reals, and the particular argument cited by Plato fixes on the difficulty which arises from the apparent inherence in the same thing of opposite qualities. How can one and the same thing be both one and many, like and unlike? Is it not clear that in such a case either the unity or the plurality must be mere appearance? And, as a real plurality is unthinkable without real units, we are driven to take the unity as real and the plurality as mere appearance. Such was the crude form in which the problem of unity in diversity first presented itself in philosophy, and it is out of the attempt to answer a question thus directly thrust upon us by the earliest reflection on the course of our experience that the subtle speculation of the *Parmenides*, and ultimately the whole of modern metaphysics, has grown. The stand-point from which Socrates in 129 comments on the paradoxes of Zeno is that of a dualism which is all but absolute, and the criticisms of Parmenides do no more than make patent what is involved in his opening statement. There is, he says, a world of sensible things, and there is also a world of Ideas or Forms; sensible things are what they are in virtue of "participation" in one or more of these independent forms: the forms however exist by themselves, "apart" from (*χωρὶς αὐτὰ καθ' αὑτὰ* 129 E) the sensible world. And, as far as that world is concerned, Socrates is prepared to accept the position of common-sense which had been impugned by Zeno. Things, inasmuch as they are the meeting-points of various and even of opposite ideas, may have different qualities according to the relations in which they stand: there is nothing paradoxical, as Zeno had thought, in the assertion that the same object or person is in one sense one, in another many. The incompatibility of unity and plurality only exists in the world of pure forms. Here self-identity apparently excludes diversity, and it would at least be a great feat to shew that the forms themselves are capable of mutual combination (129 E). In other words, the opening speech of Socrates contains a criticism which goes straight to the root of the matter. Zeno and his opponents alike had been concerned solely with physical and sensible existence: Plato will have us to understand that the problem has to be faced over again at a higher level: it is not physical but metaphysical. So the contrast between Socrates and Zeno in the dialogue reflects the contrast between the naive materialism of the early

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Greek philosophers and the deeper speculation of a later age.

Plato's meaning in his statement that the whole problem must be raised again in the world of ideas and the distinction he draws between Zeno's procedure and that which he has in view may be illustrated by the parallel passage in the *Philebus*[1] and may be made even clearer by an example. To take Socrates' own instance, we may say that it is easy to see in a particular case that in some sense the same piece of machinery or the same animal is both one and many: it is not so easy to grasp the true conception of a machine or an organism as a unity which only exists in diversity. Or, again, it is easy to see that the Universe may in some sense be said to be one, but it is far from easy to form the idea of it as a systematic whole determining all its parts. It is this difference of view which Socrates expresses in dualistic language when he speaks of transferring the problem to the world of ideas. We shall see further on what is meant by shewing the mutual implication of opposites in the ideal sphere. We may at present simply note that Plato has already given us a hint of the character of the hypotheses yet to follow. It should be observed that Parmenides at 135 E especially prefaces the hypotheses with a repetition and a commendation of this principle which is thus beyond a doubt inculcated as Plato's own, and, as we shall see, forms the connecting link between the two parts of the dialogue and the key to all its enigmas.

Parmenides at once fastens on the weak point in Socrates' theory. Socrates has unconsciously in his attempt to explain the real world set up another which cannot by any intelligible device be made to fall within it. So we find Parmenides careful from the first to tie Socrates down to the separateness and self-containedness of the ideas (*χωρὶς μὲν εἶναι εἴδη αὐτὰ ἅττα χωρὶς δὲ τὰ τούτων αὖ μετέχοντα* 130 B. cf. 130 C—D. *αὐτὰ καθ' ἑαυτὰ...ἀφοριζόμενος* 133 B). This is a point of cardinal importance, because, as will be seen in the sequel, Parmenides' arguments turn entirely on the assumption of this separation. The whole argument of Parmenides is, in fact, the application in detail of a single principle which may be stated thus:—Sever unity from diversity, and you are at once involved in the impossible task of shewing how these incompatibles come into connection. You wish to understand the world as a single whole, and, to make it intelligible, you create a second world of real being from which all motion and contradiction are banished. But your world of reality and your world of appearance fall

[1] *Philebus* 14 c. ff.

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hopelessly apart, while yet you maintain that the one is somehow the truth and ground of the other. Both claims break down on your hands, for your ideal world can neither be (*a*) the *cause*, nor (*b*) the *truth* of the perceived world. Following the argument into detail, I would present the following analysis, to each step of which I invite careful attention.

1. *Establishment of the point at issue. Contents of the ideal world.* (130 B—E.)

You assert the existence of Forms and their complete *severance* from perceived reality. (*χωρὶς μὲν εἴδη κτλ.*) What then are the contents of this separate self-existent world of Forms?

(1) Simple *qualities and relations* (likeness, unlikeness), and *mathematical determinations* (unity, plurality).

(2) *Moral and æsthetic systematic wholes* (justice, beauty, goodness). These two classes are admitted without hesitation.

(3) *Organic types* and the *primary forms of matter* (man, fire, water). Socrates expresses considerable hesitation and leaves the position of such universals undecided,—a fact which is not without its bearing on some recent readings of Platonism[1].

(4) *Matter of more ignoble and vulgar kinds* (hair, mud, etc.). Its claims are at once rejected. "You are young yet, Socrates; when you are older you will be less influenced by such sentimental considerations."

Here then we have a first and serious objection to the theory of Socrates. That theory lacks the courage to be true to itself. It refuses to admit ideal realities of a kind which popular prejudice would find ridiculous, and yet the same reasons which lead us to postulate an ideal reality corre-

[1] If I were writing a polemic against the interpretation of Plato advocated by Dr Jackson and Mr Archer-Hind I should be inclined to lay no small stress on this passage. The argument as it seems to me leads straight to the doctrine of the *Republic*—and, I will add, of the *Timaeus* (51 C—E), which postulates an idea for every universal; at the very best we shall have to see in the *Parmenides* rather the traces of an enlargement of the list of ideas by the raising of classes (3) and (4) of my classification to the same level as (1) and (2) than the depletion of the list by the exclusion of the former. A theory which logically necessitates the banishment of the *ἰδέα τἀγαθοῦ* stands to my mind self-condemned. And I do not know what to make of a metaphysic which sees some private and special approach to reality in organic types and refuses to place moral and æsthetic systems at least on the same level. Is the Auto-Bug—I may perhaps be pardoned for asking—of more worth and import in the scheme of things than the *αὐτὸ ὃ ἔστι δικαιοσύνη*? As for the absence of other ideas than those of organisms and the elements from the *Timaeus*, what else would one expect on any view in a cosmology? The *Timaeus*, we must remember, is, after all, only a fragment of a larger whole.

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sponding to the universal predicate "good" are applicable with equal force to the case of the universals "mud," "hair," etc. Aristotle and those who, following in his steps, complain that Plato does not discriminate between the different classes of universal (cf. *Met.* A 9. 990 b 22—31; *Eth. N.* 1. 6. 1096 a 23—29) have found it convenient to forget that, for the problem on which Plato was engaged, the problem of predication, it was essential first of all to establish in some sense the reality of all universals. It was only after this question had for ever been set at rest by Plato that it became possible for later philosophers to distinguish various grades in the common reality. Finally, we may say that the criticism of Parmenides is an assertion of the necessity of uncompromising logic and a condemnation in advance of that crude and hasty Idealism which owes more to an ill-regulated admiration for the grand and vague than to steady and consistent thought.

2. In what intelligible sense can the world of Ideas be said to be the *cause or ground* of the reality of the perceived world? (131—133 B.)

I have already attempted to explain the principle involved in the argument of these pages. It was then purposely stated in terms of the utmost generality, such as rendered it applicable *e.g.* to Herbart's system of simple reals no less than to the sort of Idealism advocated at 129 by Socrates. In more technically Platonic language it may be formulated thus.

You say that the sensible world exists by "participation" in the self-existent separated Forms: but it "passes the wit of man to devise" any account of this "participation" which will not be fatal to that very unity and simplicity which was to be the fundamental character of the realities of the ideal world. You will infallibly be committed either to (*a*) the divisibility of the Idea or to (*b*) the infinite regress. Let us see how this works out in detail.

1. (131 B, C). Is it the whole Idea, or only part of it, which is present in the individuals which participate in it? This question inevitably arises if you conceive of the Idea as in any sense a thing, over and above the sensible things, which has somehow to be brought into relation to them. And either answer is alike impossible. For if the whole of the ideal thing be in each of the corresponding mundane things, it seems somehow to have got outside itself, and so to involve a plurality; while if only a part of it be in each of them, then it suffers division, and thus in either case its unity is gone. Having once firmly grasped this general principle there is no need for us to trouble ourselves further either with the patently empty metaphors with which Socrates tries to rebut the former,

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or with the subtleties of detail with which Parmenides succeeds in clinching the latter alternative.

2. (132 A). A second principle of the first importance is invoked against the Ideas. It is the argument familiar to us under its Aristotelian designation as the "third man." Once more we start from the unexpressed assumption that the Idea is a thing, only not such a thing as we meet with in everyday experience, presenting a variety of more or less incompatible determinations, but a simple supersensible real. Thus conceived of, its relation to the quality of which it is the Idea is identical with that of the particular instances of its application; the "really big" can itself, like a big man or a big dog, have "bigness" predicated of it. And it will therefore follow that, just as an Idea of "big" is postulated to account for the identical quality in the sensible big things, we must postulate a second and still more remote Idea to account for the bigness common to the particulars and the former Idea. And similarly a third and a fourth, and so on *ad indefinitum*. Thus the unity and simplicity of the Idea has been assailed both from within and from without with complete success. Viewed from within, our indiscerptible real has been dissolved into an indefinite number of parts: seen from without, it is found to trail in its wake a whole infinity of reals, each more shadowy than its predecessor. And thus it would seem that the claim of the world of Ideas to be an intelligible ground of the world of sense-perception has been finally disposed of. It has been shewn that any attempt to bring the simple reals and the world of multiplicity and appearance into connection, even in thought, must end in failure, and with this result one side of Parmenides' polemic is in principle concluded. Socrates however makes two attempts to devise a theory of the connection between Ideas and things which require some consideration. It is suggested (*a*) 132 B the Idea is simply an "idea in our heads." This would save its unity, though, as we can easily see, at the expense of its ultimate reality, and would lead us back to a refined form of the subjective idealism of Protagoras and Hume. Parmenides however does not enter on a detailed examination of this interesting view but meets it at once with a dilemma which, if not fully conclusive, is always likely to prove effective as a weapon in the hands of the opponents of mere subjectivity. The inherence of the idea in the particulars has now been reduced to mean the entrance of a single mental state into various combinations of mental states (132 C). Accordingly we are asked to choose between two alternatives. Either the things can themselves think, or there are unthought thoughts. Similarly one might meet Mr Spencer's designation

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of his umbrella as a "set of visual states" by the query "what becomes of the umbrella when it is put away in the stand? Is it a state of its own consciousness, or are there states of consciousness of which no one is conscious?" It is true there are ways of escape from this dilemma, but the lines of thought to which they would lead are so fantastic and so far removed from the ordinary highroad of thought that we need not be surprised if Socrates makes no further attempt to defend the suggestion.

(*b*) Socrates' second suggestion is of much greater importance. May we not say (132 D) that the best notion of the relation between the idea and the particular is afforded by the relation between an original and the copies made from it? If we think of the Idea as a sort of divine archetype or original of which the actual world presents a multiplicity of sensible copies, we seem to have reconciled the unity of the one with the plurality of the other. For one original may be recopied a countless number of times without in any way losing its own character of singleness. Hence Socrates is now prepared to advance the view that the idea is related to the particular as original to copy, and that the "participation" which we have found so insoluble a mystery is simply "resemblance" (*ἡ μέθεξις αὐτὴ τοῖς ἄλλοις...οὐκ ἄλλη τις ἢ εἰκασθῆναι αὐτοῖς*). It has been pointed out that in his criticism on the new theory Parmenides fixes solely on the latter part of it as the object of his attack. He does not pronounce for or against the existence of "paradeigmata" in nature, but proceeds to argue against the substitution of "resemblance" for the more general "participation" as an account of the relation to the Ideas of the sensible world. Against this view he once more employs the "third man" principle. If the particular be *like* the Idea then on Socratic principles this "likeness" can only be explained by their common relation to a second Idea, and to this new Idea the same considerations apply, and we find ourselves once more condemned to the infinite regress. The conclusion then must be (133 A). It is not by "resemblance" but in some other way which we have yet to discover that things "participate in the Ideas." And here we might be inclined to think—and I believe rightly so—that the new account of the Ideas was as completely disposed of as the old one. It has however been maintained by some recent interpreters that the case is quite otherwise, and that we have in the theory of "paradeigmatic" Ideas a new version of Platonism which is presented to us by Plato as free from the difficulties which have proved fatal to the earlier theory of *μέθεξις*. Though this view has the eminent name of Dr Jackson on its side I am convinced that it is erroneous—at

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least as far as the position of the Ideas in the present dialogue is concerned, and I am consequently compelled to ask the indulgence of the reader while I give my reasons for dissent.

The arguments in favour of this view, so far as they can be separated from a much more wide-reaching general theory of Plato's inner development, seem in the main to be the following:—

(1) It is noteworthy that, while the name and theory of μέθεξις are very much to the front in a most important group of dialogues (*e.g. Republic*, *Phaedo*) which seem to belong to Plato's prime, in the *Timaeus*, which is admittedly one of his latest writings, both the thing and the name[1] have disappeared, though παραδείγματα recur on every page. What more likely then than that Plato gradually came to see the difficulties connected with the theory of μέθεξις much as they are exposed in the opening chapters of the present dialogue, and was led in consequence to substitute in the final form of his philosophy a "transcendent" Idea which is strictly separated from the particulars for the old "immanent" Idea in which particulars "participated"?

(2) If we incline to this view of Plato's mental history we seem to find a special significance in the *Parmenides*. For it is in the present dialogue that we for the first time meet the criticisms which are fatal to the theory of μέθεξις which had satisfied Plato when he wrote the *Republic*: it is also here that the theory of "paradeigmatic" Ideas is first advanced as an answer to those difficulties. Hence on this view the one dialogue which has hitherto been a standing puzzle acquires a definite purport and a fixed place in the series of Platonic writings. The *Parmenides* in fact marks the turning-point in Plato's speculative career. Here for the first time he passes from the old question how one thing can have many predicates, to which the theory of μέθεξις seemed to afford sufficient answer, to the new question which will henceforth determine his thought. How can one Idea, without losing its unity, be dissipated among a plurality of things? Confronted by Parmenides with this new problem, Socrates finds himself unable to answer it, and is in consequence compelled to abandon μέθεξις and the immanent, for μίμησις and the transcendent Idea, which are, as already said, the marks of the latter, as distinguished from the earlier, Platonism.

(3) Hence it is significant that Parmenides says, as I have

[1] This last statement is only true if taken in a very literal sense; cf. *Tim.* 51 B μεταλαμβάνον ἀπορώτατα πῆ τοῦ νοητοῦ. And to maintain the transcendence of the εἴδη in the *Tim.* you are bound with Mr Archer-Hind to draw a distinction throughout c. 18 between two kinds of εἴδη.

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already remarked, not a word against the first part of the new explanation. His attack is directed not against the existence of the "paradeigmatic" or "archetypal" Ideas, but solely against the view that their relation to the ectypes can be satisfactorily denoted by *ὁμοίωσις* or by *εἰκασθῆναι αὐτοῖς*. We conclude therefore that the latter half of the theory may be incorrect, but the first part—that the Idea is a *παράδειγμα*—is a hint, now for the first time given by Plato, of the modification of his original theory which we may henceforth expect to find in his writings.

Against these arguments I would however venture to suggest the following objections which are to my mind conclusive, at least as far as the *Parmenides* is concerned.

(1) The theory just stated assumes an order of the Platonic writings which is at any rate open to grave question. There is at least as much reason for placing the *Parmenides* before as for placing it after the *Republic*[1]. And yet if the *Parmenides* be prior to the *Republic* the above account of Plato's mental development falls at once to the ground.

(2) And in any case the relation of *μέθεξις* to the "paradeigmatic" Idea seems to be misconceived. It is not the case that we have first a period in which we are told only of *μέθεξις* and then a second period in which we hear of nothing but *μίμησις*. For if the only perfectly clear case of a "paradeigmatic" Idea to be found in the *Republic* is that of the "ideal bed" of 597 which serves as a model to the carpenter, we meet constantly with passages where the word is used in connections which approximate so closely to this meaning as hardly to allow of any serious distinction: cf. 500 E and 592 B. As for *μέθεξις* I will content myself for the present with producing two passages from a dialogue which is admittedly one of the later ones. At *Soph.* 255 E one thing is said to differ from another because it "partakes of the idea of diversity" *διὰ τὸ μετέχειν τῆς ἰδέας τῆς θατέρου*, and a little lower down a thing has identity *διὰ τὴν μέθεξιν ταὐτοῦ*[2]. I should consequently conclude that, so far from the use of one or the other set of phrases about the Ideas and their relation to particulars marking an earlier or later stage in Plato's thought, Plato

[1] See Zeller in *Platonische Studien* and *Geschichte* II. 1. 548, Apelt pp. 63, 64 (whose views based on Constantin Ritter seem more probable than those of Zeller) and cf. p. 324 below.

[2] This passage in itself by the way, as it seems to me, disposes of Mr Archer-Hind's "deduction" that the *μέγιστα γένη* of the *Sophistes* are not *εἴδη*; unless a distinction be made, as in the *Timaeus*, between two classes of *εἴδη*. But the identity of *εἶδος* and *γένος* in Plato is too well-known to need any proof here. See however the passages quoted below at p. 321.

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allowed himself from the first to use either metaphor at pleasure according as it suited the general complexion of a particular passage,—and I will add that I have no doubt that he was quite as well aware that both were no more than metaphors as any of his critics can be. That the two expressions were understood by Aristotle to be interchangeable and to have no reference to a development of opinion is so patent that Mr Archer-Hind is driven (on *Tim.* 52 A) to impute something like unfairness to him to explain his application of the theory of *μέθεξις* to Plato's doctrine of space. It is perhaps a simpler and more probable assumption that the reason why Aristotle did not distinguish a period of *μέθεξις* from a period of *μίμησις* in his account of Plato is the very good one that no such periods existed.

(3) And with reference to the *Timaeus*, while I admit that the relation of the Idea to its particulars is there habitually spoken of as that of an archetype to the copies of it, I would respectfully submit that, given the mythical setting of the dialogue, no other phraseology was artistically possible, and that to press the metaphors which are natural to the mythical poet as pieces of rigidly scientific metaphysic is as absurd as it would be to take the similar language about the "pattern laid up in heaven[1]" of the ideal city in the *Republic* in the same way. And why—if we are allowed to treat the heavenly craftsman as part of the myth—are we to take his archetypes seriously? And I think I can further justify my refusal to regard the words *μίμησις* and *παράδειγμα* in the *Timaeus* as rigidly scientific terms by the following indirect argument. It is admitted even by the believers in the "paradeigmatic" Idea that the theory of its relation to particulars indicated by the words *ὁμοίωσις* and *εἰκασθῆναι* is pronounced by Parmenides false in so many words. Now at *Tim.* 51 A we read of *τὰ τῶν πάντων ἀεί τε ὄντων...ἀφομοιώματα*, by which are meant the material things in which the Ideas are particularised, and at 30 C it is asked *τίνι τῶν ζῴων εἰς ὁμοιότητα ὁ ξυνιστὰς ξυνίστησε* (sc. *τὸν κόσμον*), while I need hardly pile up instances of the use of *εἰκών*, *εἰκός* in the same connection (cf. for specimens *Tim.* 29 B, 92 B). Seeing then that Plato does not scruple in the mythical narrative of Timaeus to employ phraseology which he has himself pronounced not strictly philosophical, we can hardly conclude from the frequent presence of the *παράδειγμα* in that dialogue that it is more than one metaphor among others.

(4) And, whatever be the case with the *Timaeus*, we may, I think, be certain that in the *Parmenides* the theory that the

[1] *Rep.* 592 B.

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Idea is a "paradeigma" is not advanced as an alternative to the theory of *μέθεξις*, but only as a special case of it. For an integral part of the theory is that *μέθεξις is* resemblance (*οὐκ ἄλλη ἢ εἰκασθῆναι αὐτοῖς*). The two theories are thus not held by Socrates to be mutually exclusive: one is advanced, not as a correction, but as a further explanation of the other. Similarly Parmenides winds up his refutation of the doctrine of *ὁμοίωσις* not by concluding,—"thus the theory of *μέθεξις* is fundamentally wrong and must henceforth be abandoned," which is what he ought to say on Dr Jackson's and Mr Archer-Hind's view, but—"thus we must find some better account of what *μέθεξις* is" (*ἄλλο τι δεῖ ζητεῖν ᾧ μεταλαμβάνει*). That in some sense the particular *μεταλαμβάνει τῆς ἰδέας* Parmenides thus tacitly assumes: the only question is to explain in *what* sense.

(5) And lastly—to end this tedious piece of argumentation—I must confess that I cannot understand how the two elements of the view advanced by Socrates at 132 D can be separated from one another. As far as I can see, if it is strictly correct to apply the conception of a "model" or "original" to the Idea, then you *must* conceive of its relation to the particular as "likeness" or "resemblance," and, consequently, by the laws of the ordinary hypothetical inference, *if* that relation can only incorrectly be described as "likeness" it cannot be more than a loose metaphor to call the Idea a "paradeigma." Others may perhaps understand what is meant by a relation between two things one of which is an "archetype" and the other an "ectype" which must nevertheless not be called a relation of "likeness": for my own private part I can only plead my complete inability to grasp what is meant as an excuse for not discussing the speculative worth of the conception more fully. In fact, if one is serious with the notion it seems to lead back to that primitive conception of the unseen world as a mere replica in a more shadowy form of the world of sense which Plato steadily combats; while, if it doesn't mean something of this sort, what is it but a mere catch-word? This concludes what I have to say on the conception of the Idea as a "paradeigma." I shall offer some more general reflections on the question of "transcendence" as against "immanence" when I have ended my analysis of the first part of the dialogue.

We have now reached the conclusion of the first part of Parmenides' polemic against the theory of Ideas as formulated by Socrates at 129 A. He has proved up to the hilt by the confession of Socrates himself that the Ideas as there conceived cannot possibly be the ground of the existence of the sensible world. And the rock on which the theory has made threefold

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shipwreck has been the unity of the Idea conceived as the complete negation of diversity. In making the Idea "separate" (χωρίς) from the sensible world and incapable of diversity of relations and predicates we have converted it into something after the type of an Herbartian "real," and it has been throughout this treatment of the Idea which has been the source of all our difficulties. I have shown above that this was the case all through the main argument against μέθεξις, and it is still easier to see that it is the same fundamental flaw which vitiates the "paradeigmatic" theory. For there is no meaning in saying that the particular (*e.g.* horse) is *like* the generic concept unless you think of this latter as in some way or other an individual, just like any visible and tangible horse that paces and trots, and, *mutatis mutandis*, the same is the case even with such ideas as "justice," "bigness." To call them "things" would perhaps be to perpetrate a slight outrage on ordinary language, but it is essential that we should remember that in the theory we are criticising they are to the full as individual as any of the corresponding particular cases. Hence it is that their existence and their quality fall apart, and there is room within the unity of the Idea for the predication of its content about its existence, and thus for the inevitable *regressus in indefinitum*.

3. We may now turn to the second part of the polemic against the errors of a hasty Idealism (133 B–135 B). As we have already seen, εἴδη such as Socrates had described cannot be the ground of the world's existence: we are now to learn that they cannot constitute its *truth*. If the world of Forms exist it is at least incapable of entering into our knowledge, and the knowledge, if such there be, which reposes on the Forms is not a knowledge of the actual world.

The argument proceeds as follows:—

If you admit an Idea as something distinct from sensible reality, something transcendent and self-contained (καθ' αὑτήν), you must hold that no Ideas are in our possession. To deny this is to do away with the Idea's transcendence (133 C). Consequently, assuming that Ideas stand to one another in fixed relations determined by their content, one Idea will always be relative to another Idea, one actual thing to another actual thing: there will never be a case where Idea and sensible thing appear as the terms in this relation. This is of course self-evident. The correlate of "slave" is "master": of a particular slave a particular master, etc. What follows from this? That true or ideal knowledge is knowledge of the Ideas and is strictly relative to them, while the knowledge we are competent to enjoy is knowledge of our own world alone. Thus the world of self-existent Forms (notice γένη as a complete

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equivalent for εἴδη 134 B[1]) is manifest only to an ideal knowledge: *we* who move in the world of mere sense-reality are completely shut off from communication with them. We do not (134 B) and cannot know what real beauty and real goodness are. And, what is still more perplexing, the same defect attaches even to the perfect or divine intelligence, only on the other side. If true knowledge be knowledge of the ideal world, then God knows *only* the Ideas and has no knowledge of us or our world. And similarly if "real mastership" has for its correlate "real servitude" God is not *our* master nor are we his servants. Thus, great as are the limitations which the theory inflicts on human understanding, it forces them equally on the divine. Such are the difficulties, Parmenides concludes, which beset a theory of Ideas and lead to the belief that they either do not exist or are unknowable to man. On the other hand (135 B) to deny the existence of Ideas is to destroy all discourse. Thus the choice seems to lie between affirming a doctrine which has proved itself a mass of contradictions and renouncing all attempts to understand the world.

Once more, before I comment directly on the argument of Parmenides, I must enter a caution against a plausible, but, as I think, a mistaken understanding. The argument just analysed is not directed in any special sense against the "ideas of relation" to the exclusion of other Ideas. The reasoning of ch. 6 by which it is shewn that Idea is always and exclusively relative to Idea is merely preliminary to the establishment of the exclusive relation between true knowledge and true (*i.e.* ideal) existence. And the argument based on this relation is one of universal applicability. Even if you narrowed your list of Ideas down to ζῷα and ζῷα alone, it would still follow with equal cogency that if the ideal ζῷα are in one world and the sensible ζῷα in another, God knows only the former and we only the latter. And I may remark in general that to abolish ideas of relations would not necessarily be to abolish relations among the Ideas, and it is the latter on which the reasonings of ch. 6–7 are founded. For, there is this difference between the Ideas, even in the crude form in which they are here advanced, and those simple "reals" of Herbart with which I have compared them and to which they are on one side so closely akin, that Plato does throughout assume that in some way or other there are between the simple reals such threads of connection as are mirrored in the manifold relations of sensible existence. His ideal world, even in the first part of the *Parmenides*, is after all an ideal world, not a

[1] 135 B carries us still further. Here γένος is expressly equated, not merely with εἶδος, but with αὐτὴ καθ' αὑτὴν οὐσία (μαθεῖν ὡς ἔστι γένος τι ἑκάστου καὶ οὐσία αὐτὴ καθ' αὑτήν).

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chaos. For him there could be no such impossible task as that which afterwards devolved on Herbart of shewing how what is absolutely unconnected and independent of relations can yet in actual fact—*modis pollentia miris*—come together and form a basis for the world of related existence, while all the time retaining its profound indifference to all outside itself. The difficulty of seeing how the Idea can contain, over and above its *essentia*, relations to other things, he obviously felt to be a serious one, but it does not seem that this difficulty at any time led him to doubt that there might be Ideas whose *essentia*, though no doubt really one and indivisible, cannot be stated without involving the use of relative terms. While, for the benefit of believers in the special reality of organic types, I will point out that the admission of relations among Ideas follows directly and necessarily from the recognition of Ideas of organisms. If the Ideas were, like Herbart's reals, confined to the manifestation of a single quality, they might conceivably continue to flourish apart from any element of relation: an *αὐτο-άνθρωπος* would however be quite unintelligible without both internal and external relations; internal relations, that is, between what Plato calls *εἴδη ἐν τῇ ψυχῇ*, and external relations to the ideal *πόλις* "whose builder and maker is God." Apart from these the first rudiments of humanity would be unrepresented in the typical man. It is indeed true that ultimately the recognition of any element of relation in the Ideal world is incompatible with such a unity free from all diversity as Socrates has theoretically proposed. As we shall see however in connection with the second part of the dialogue, this bland unity of monotonous sameness is in any case doomed; and it is by no means alien to the spirit of Plato that the dialectic of Parmenides should do no more than expose a contradiction which was already inherent in the first statement of the doctrine. It should be noticed, moreover, that Parmenides, by the form he gives to his argument, implicitly admits that very presence in the Ideal world of relations which is, according to one view, the mistake he intends to expose. For, if there be no relations among the Ideas, it is certain that our knowledge, which moves only between related points, cannot live in such an atmosphere, and hence the inaccessibility of the Ideas to our understanding, so far from being the alarming paradox it is felt by both Socrates and Parmenides to be, is a natural and obvious conclusion from the premisses. And further note that this is no mere question between an adequate and an inadequate knowledge of ultimate truth. From the assumption of the transcendency of the Ideal world, whether you admit relations into it or not, it follows at once that we,

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at least, are debarred from any knowledge, near or remote, of its contents. It becomes an Unknowable of which we can perhaps say that it is something or other and that it contains an explanation of our difficulties about reality, if we could only get at it, which we can't. And this being so, I should say that the theory of a world of transcendent Ideas in which relations have no place *τὴν τοῦ διαλέγεσθαι δύναμιν παντάπασι διαφθερεῖ* quite as thoroughly as that of a transcendent world + relations. And it is some comfort to me to observe that Parmenides himself at 134 B, C selects, as typical of those realities the knowledge of which is on the Socratic theory beyond our reach, two great Ideas, "the good" and "the beautiful," the content of which can only be expressed (cf. *Philebus* 65 A) in the form of systematic wholes of relation, while, in the second part of the dialogue, we shall find him expressly asserting the existence of two such shamelessly relative Ideas as "greatness" and "smallness." (149 E *οὐκοῦν ἐστόν γε τίνε τούτω εἴδη, τό τε μέγεθος καὶ ἡ σμικρότης.*) I should infer then (*a*) that the world of Ideas in any case for Plato contains relations of Ideas both internal and external; whether to admit relations of Ideas is also to admit Ideas of relations is I think a merely technical question which does not affect our general conception of the ideal world. (*b*) That the polemic of Parmenides is directed not against the relativity but against the "separation" of the ideal world, and thus that the second half of his negative argument is based on the same principle as the first—the impossibility of finding the inmost reality of the sensible world in a world of Ideas which is *ex hypothesi* entirely outside and beyond it. The sole difference of view, as far as I can see, between the two parts of the argument is that in the second part the mere transcendence of the Idea leads of itself to the refutation, while in the first part the *ψεῦδος* lies in the assumed unity as well as transcendence of the Idea.

The foregoing remarks have so fully indicated the view I would support of c. 7 that I might almost be content to pass without further delay to a final resumé of the position of things which leads to the production of the hypotheses. I can however hardly refrain from calling attention to the peculiarly cogent form in which the argument against the "transcendent" Idea is presented in 134 C foll., the more so as the theological and mythical language in which it is expressed might perhaps for some modern readers obscure its full value. Rightly understood it is, I think, unanswerable. Unpleasant as it is to admit that the Idea, if it exists, is unknowable for us, it is at least conceivable that such may be the case, and in certain moods we

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may even derive a curious satisfaction from the admission. Who, after all, are we, and what is our limited and partial knowledge, that we should even dream of some day holding in our hands the key to existence? But the dualism of the ideal and the sensible wears another aspect when you see that it condemns the absolute intelligence to the same defects as the human. And yet this result is inevitable. If you can sever appearance and reality and make two worlds of them, it is clear that for the absolute understanding reality is and appearance is not. And thus you get a world of appearance which somehow is and is knowable, and yet falls inexplicably without the real as it exists for a perfect intelligence. And this conclusion seems hardly satisfactory; though, at the same time, it would be hard for the advocates of "transcendence" to find any escape from it.

We are now prepared to face the dilemma which the logic of Parmenides has brought home to us. We have seen that the ideal theory as originally formulated will not work: the Ideas cannot be brought into any intelligible connection with the world of experience. The attempt to treat them as its ground proved fatal to their own unity and independence, and the search for truth in them has led to the conclusion that truth is unattainable. Yet, by the admission of Parmenides himself, without Ideas there can be no rational thinking. Diversity devoid of any centre of unity is as unthinkable as unity untainted by diversity. Where then are we to seek an escape from the alternative impossibilities with which we have been brought face to face? Clearly in one direction. If there can be no thinking either without the Ideas or with such Ideas as we have been discussing, there must have been some original defect in the theory as at first advanced. Our problem is then to discover what point in the Socratic theory has been the object of the polemic and to restate the doctrine freed from this objectionable point. And it is just this that must be the purpose of the Parmenidean antinomies which we shall have directly to consider if the dialogue is to have any internal coherence. And so far we are in entire agreement with the believers in the "paradeigmatic Idea" as to the link of connection between the parts of the dialogue.

On one theory of Plato's meaning, indeed, this reading of the dialogue would be incorrect. Since Stallbaum first pointed out the existence of a Megaric influence in the *Parmenides* it has been common to hold that the objections advanced in the first part of the dialogue are not such as could have been seriously intended by Plato himself, but are in all probability urged from a Megarian stand-point. In that case the purpose

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of the antinomies will be, not to correct a crude Idealism, but to refute the Megarian opponent indirectly, as Zeller says, by shewing that the Megarian conception of the "One" leads to equal or greater difficulties. Backed as this opinion is by the authority of the most eminent of living students of Greek philosophy (Zeller, *Gesch. d. Gr. Ph.* ed. 4, vol. 2. 1 pp. 259, 547, 548), it seems to me impossible to accept it in its entirety, for the following reasons:—

(1) On this interpretation of the dialogue we must suppose that the criticisms passed by Parmenides on the doctrine of Ideas are criticisms the justice of which Plato does not admit, and that the theory propounded in 128–129 is Plato's own. But, if the estimate I have formed of Parmenides' arguments is correct, his criticism is not only just but annihilating. That Plato should have advanced such unanswerable objections to a doctrine which he nevertheless believed at the very time he was formulating them is to me quite incredible. It would indeed be the most powerful argument against the authenticity of the *Parmenides* if it could be shewn that the Idealism of 128 foll. is the Idealism of Plato. I conclude then that the views of Socrates at that place do not represent the doctrine held by Plato himself, at least at the time the dialogue was written.

(2) Again, if we suppose that the object of the antinomies is merely to convict the Megaric school of absurdities as gross as those which have, by Socrates' own confession, been brought home to the Ideal theory, we seem to have a painfully lame and impotent conclusion to the dialogue. On this view the second part would be at best a *tu quoque*. Plato would have proved that the "One" was as false a theory of reality as the Ideas—but nothing more, and no amount of obloquy cast on the "One" would in the least degree rescue the Ideas from the discredit which had so deservedly overtaken them. Once more then, I conclude that the argument of the dialogue compels us to seek the main purpose of the second part not in the discrediting of the Megarian "One," though that may very well have been a secondary object with Plato, as we shall see, but in the rehabilitation of the apparently annihilated Ideal theory.

(3) I might further add, which I only do with some diffidence, that if I am right in seeing in the supposed mere self-identity of the Ideas one of Parmenides' chief points of attack, it would be strange that this particular objection should have been raised by the very school whom nearly all commentators identify with the champions of the changeless and moveless "forms" who are criticised in *Sophistes* 248 foll. (Zeller's remark that the Megarian doctrine of Parmenides is of a more

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developed type than that there examined surely minimises the difficulty).

(4) And, lastly, how is this view consistent with the part played by Parmenides in the dialogue? On this theory Parmenides first criticises Platonism from the Megaric stand-point, and we then get a rival criticism of Megarianism from the Platonic stand-point—also put into the mouth of Parmenides. What then is Parmenides' own position? If he is neither Platonist nor Megarian, what is he? Surely, if Plato had had the object Apelt and Zeller suppose before him, the exposition of the weakness of Megarianism should have been given to *Socrates*, not to the man who has appeared all through Part 1, as a Megarian.

I shall make bold to offer a different theory of the connection of the dialogue with Megarianism further on.

We are justified then, I believe, in assuming as we have done that throughout the dialogue Plato is speaking as much under the mask of Parmenides as under that of Socrates: that the difficulties of the first part which appeared to us so insuperable are real difficulties: and in expecting that the remainder of the dialogue will contain, if we only knew where to find it, some indication of Plato's own answer to them. And in this conviction, which a consideration of the opposite view has served to strengthen, we may now return to the question in the proper answering of which we hope to find the clue which shall guide us through the mazes of the labyrinth to which we are so soon to be introduced. What is—so ran our key question—the particular weakness in the Ideal theory of the young Socrates against which the elaborate argumentation of ch. 4–8 was directed? And we have already answered the question in our own way more than once. The whole of our analysis has gone to shew that the cardinal error of Socrates lay in the sharp and absolute severance between the Idea and the sensible world with which he started, and in its logical result of taking unity on the one hand as separable from diversity and multiplicity on the other as divorced from unity. The same conclusion is forced upon us by attention to the terms in which the Ideas are spoken of. From the moment in which Socrates first formulates his theory Parmenides takes the greatest pains to commit him to two statements about the Ideas which place the inherent dualism of this would-be monism in the clearest light. The Ideas attacked are:—

(1) *χωρίς. χωρὶς μὲν εἶναι εἴδη αὐτά...χωρὶς δὲ τὰ τούτων αὖ μετέχοντα* 130 B foll. *ἀνθρώπου εἶδος χωρὶς ἡμῶν, ...εἴτε χρὴ φάναι καὶ τούτων*—sc. mud, hair etc., *ἑκάστου εἶδος χωρίς.*

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(2) *αὐτὰ καθ' αὑτά*. 130 B, 133 A, C, 135 B.

Of these two almost equivalent epithets we may perhaps say that the first describes negatively and from the point of view of the sensible thing what the second puts positively and from the point of view of the Idea itself,—the absolute severance between the two worlds which is nevertheless not to interfere with the dependence of the one on the other. It is—and our analysis must be the proof of this statement—from this special feature of the doctrine that all the difficulties with which Socrates found it beyond his strength to cope are directly or indirectly derived. The impossibility of knowing the Ideas was the immediate consequence of their severance from our world of sense-perception: the infinite regress and the other considerations which were fatal to their very existence derive mediately from the same source and fount of error through the inevitable erection of the "separated" Idea into a particular individual thing or "case" by the side of the sense-particulars. We conclude then, on the whole, as the moral of the first part of our dialogue that, while there must exist "Ideas" as a permanent and universal element in reality if thought is to do its work, those Ideas cannot be "separate" or "self-contained," at least in the sense in which those attributes have been understood hitherto by Socrates. The thought-unities of which we are in search cannot exist by the side of and unaffected by the diversity and multiplicity of the sensible world. We are thus driven to the conception of a unity which, so far from being "apart from" diversity, can only exist and manifest itself in diversity, as the only kind of unity by the aid of which we can hope to understand the world as a single rational whole, and our natural expectation therefore is that the remainder of the dialogue will be concerned with the explanation and development of some such conception. This natural expectation is, as I hope to shew, fully justified by the sequel. At the same time, it is clear that in thus conceiving of the problem before us we are verbally at least directly controverting that theory which makes the "transcendence," as opposed to the "immanence," of the Idea the distinguishing mark of that later and maturer Platonism towards which our dialogue is assumed to take the initial step. From this point of view the source of all Socrates' mistakes is not his belief that the Idea is apart from the world of sense but his failure to carry that belief out consistently, and the object which Parmenides has in view throughout is not to confute an essentially erroneous opinion but to point out that Socrates is inconsistently refusing to recognise the consequences of a right one. It is not that he is too separatist but that he is not separatist enough. The last vestige of the Idea's "in-

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herence" must be swept away before it will be possible to present an ideal theory which shall be consistent with itself. Thus whereas we have taken the previous arguments as a proof that the Idea cannot, strictly speaking, be χωρίς, the newer Cambridge Platonists understand them to demonstrate that it cannot conceivably be anything but χωρίς; and while we should see in these chapters an anticipation of all that Aristotle has to say about the impossibility of εἴδη which are κεχωρισμένα or παρὰ τὰ πολλά they would find in them a doctrine the very reverse of Aristotle's, which affirms that if εἴδη are to exist at all they not only can be but must be all that Aristotle denies of them. I have already indicated, partly by the general character of my analysis and partly by my criticisms on the "paradeigmatic" Idea, the reasons for my dissent from this account of the matter, and it will appear still more clearly in the analysis of the antinomies how diametrically opposed is this interpretation of the dialogue to the line of thought which, to my mind, alone constitutes the connection between the two parts of the work. Hence I do not propose to do more here than to make one or two remarks of a very general character on the question of "transcendence" as against "immanence." Of course no one will deny that Plato's Ideas are frequently spoken of as if they were in some sense or other "separate" from the sensible world and "self-contained" or "independent." It was inevitable that such language should be used about the Ideas, and it has a very definite meaning of its own. Against the current sensationalism of popular metaphysics Plato, in approaching the problem of significant predication, was compelled to insist that a thing might be incapable of being the object of a sense-perception and yet for all that be real, and that the merely particular, apart from universals which give it all its content, has no being at all. And such lines of thought find their natural expression in language in which stress is laid on the distinction between the universal which is cognised by thought alone and the particular of sense-perception, and the contrast between the perishability and instability of the one and the permanent and fixed character of the other. It is a natural result of such expressions that Plato's Ideas should appear to the incurious reader to be often elevated into a second and independent world by themselves, and in denying the "transcendence" of the ideas I neither imply that such language is not common in Plato nor deny that it represents one element in his thought. What I do deny is that the "transcendent" character of the Idea is here or anywhere taught in such a sense as to be incompatible with its "inherence" in some way in the world of particulars. To make the Idea "transcendent" in this sense

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is, in fact, to deny *in toto* its applicability to the problems of the actual world. For so long as it is admitted that the Idea is in some way or other either the ground or the truth of the facts of sense (and to deny this is to renounce Plato and all his works), you have asserted such a connection between the two as is meant by "inherence" and there is no reason why you should be afraid of the harmless word. Unless indeed the metaphor conveys to your mind some astounding spatial implication, as of the local presence of Idea to thing, or God knows what besides. And it is hardly true as a matter of fact that the phrases which dwell on the "transcendent" aspect of the Idea are exclusively or even prominently derived from that group of dialogues which this hypothesis regards as dating from Plato's latest period. All that is said *e.g.* in the *Timaeus* about the distinction between the perishable world of becoming and the stable world of everlasting being, the one apprehensible by sense, the other manifest only to reason, is familiar to us—not to mention other sources—from the *Republic*. *Republic* 5–7 may indeed be said to be almost the *locus classicus* for this side of Plato's views, and anyone who has ever taught Plato to beginners must be aware that it is just this apparent dualism and "transcendence" of the Ideas which proves the universal stumbling-block in the way of a true understanding of Platonic speculation. On the other hand, if the "transcendence" of the Ideas be supposed to exclude "participation" in them on the part of things, it is hard to interpret either the *Sophistes* or the *Timaeus* without having recourse to the most strained and arbitrary methods of exegesis. Thus Mr Archer-Hind is driven in the interests of his theory to maintain in the very teeth both of Plato's consistent usage and express statement that the five great *γένη* of the former dialogue are not Ideas[1], and, in his commentary on the important 18th chapter of the latter (see *Tim.* 50 D *ἄμορφον ὂν ἐκείνων ἁπασῶν τῶν ἰδεῶν ὅσας μέλλοι δέχεσθαί ποθεν*), to advocate a distinction

[1] Contrast *Soph.* 254 C *μὴ περὶ πάντων τῶν εἰδῶν...ἀλλὰ προελόμενοι τῶν μεγίστων λεγομένων ἅττα*, 255 C *τέταρτον δὴ πρὸς τοῖς τρισὶν εἶδεσιν εἶδος τὸ ταὐτὸν τιθῶμεν*, D *πέμπτον δὴ τὴν θατέρου φύσιν λεκτέον ἐν τοῖς εἴδεσιν οὖσαν*, E *διὰ τὸ μετέχειν τῆς ἰδέας τῆς θατέρου*, 256 E *περὶ ἕκαστον ἄρα τῶν εἰδῶν πολὺ μέν ἐστι τὸ ὄν*, 258 C *ἔστι μὴ ὄν...εἶδος ἕν* etc., not to add countless similar passages from the *Philebus*, *Politicus*, and *Timaeus*, of which I will merely indicate three: *Phil.* 23 C, D, *Polit.* 285 B, C, *Tim.* 50 E. But that the equivalence of *εἶδος* and *γένος* in Plato is so well established already it would be easy to make the list ten times as long. Of *μέθεξις* in the *Sophistes* I have already given two examples. One might add 255 B *μετέχετον—ταὐτοῦ καὶ θατέρου*, 256 D *τοῦ ὄντος μετέχει*, 256 E *μετέχει τοῦ ὄντος*, 259 A *τὸ μὲν ἕτερον μετασχὸν τοῦ ὄντος ἔστι διὰ ταύτην τὴν μέθεξιν*. I can detect no difference in principle between the use of *μέθεξις* in these passages and that with which we are familiar from the supposed 'earlier' dialogues.

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for which Plato's language affords not the shadow of a ground between ἰδέαι which *are* Ideas (*αὐτὰ καθ' αὑτὰ εἴδη*) and ἰδέαι which are not. But a theory which can only be defended by such feats of interpretation as these stands self-convicted. So that I think the probabilities are all in favour of our own and against the Cambridge view on this question of "transcendence." And if anybody still feels uneasy in the matter I should recommend him to ask himself seriously (it is more than most persons who use these unhappy phrases do) what "transcendence" and "immanence" may mean, and whether either is ultimately intelligible apart from the other. In my own mind I have no doubt that an honest examination into this point can have only one result.

If we still entertained any doubts as to the general correctness of our conception of the fore-going argument they should be removed by a little attention to the following speech of Parmenides, 135 C–E. He first of all indicates the mental defect which has been the cause of Socrates' failure. Socrates is still young, and his enthusiasm for certain great philosophical principles has made a hasty attempt to construct a system of Idealism without having previously gone through the necessary if barren and arid discipline of exact and detailed metaphysical thinking. (A fault we may observe in passing which is sufficiently prevalent in our own day among young philosophers, and even among some who can no longer be called young.) Before proceeding to explain the nature of the preliminary training however Parmenides repeats with emphatic approval the remark of Socrates which had led to the whole discussion—that the puzzles and paradoxes of unity and multiplicity ought to be investigated not in the world of sense-perception but in the world of Ideal Forms itself (135 E). To the emphatic reiteration of this general principle at the most critical point of the discussion it is I think impossible to attach too much importance. For unless I am much mistaken it is intended to supply the necessary key without which the hypotheses which are to follow would be mere enigmas. For what is the position of the argument at the present moment? The Ideal theory originally put forward has been found wanting, and wanting in this very point. Its weaknesses were all due to its refusal to admit into the Ideal world that diversity and intercommunicability which it was prepared to recognise as far as the world of sense was concerned: it was this that led to that unhappy dualism which placed the unity in one world and the diversity in another, and so made both in the end impossible. The problem before us, on the break-down of this premature Idealism, was to reconcile the existence of the Ideas

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with their relation to the sensible world, and we could already see that this was only possible in one direction, viz., if we can shew that in the world of thought itself unity, so far from being destroyed by being brought into relation with diversity, is only possible in and through a diversity which arises out of its own inmost nature: and this was the very problem which Socrates had originally pronounced all but insoluble. The echo of that remark at the present crisis can hardly be anything but a hint *συνετοῖσι* that it is this arduous problem (which is as we have seen the first task of a sound metaphysic) which Parmenides means to illustrate, and perhaps to solve. To exhibit unity and diversity in their most abstract and general form as only possible by means of one another,—such is, in the baldest language, the necessary propaedeutic to a true understanding of the world as a whole, and such unless I mistake is the purpose of the antinomies of Plato's *Parmenides*. How far this conception of a world which is a systematic unity emerges clear and consistent from the mists of apparent paradox and confusion will only be visible after a painstaking examination, on which I propose presently to enter, of the details of the nine successive hypotheses, but I think we may at starting say as much as this, that if by the aid of our general theory we succeed so far as to get even a tolerably coherent doctrine out of the tangle our hypothesis will have accomplished more than any which has hitherto been proposed. And I should now prefer to enter at once on the main undertaking *σὺν ἀγαθῇ τύχῃ*, but I feel that it will be better, in order to prevent possible misconceptions, to preface the second part of my paper with some general reflections on (1) the position in the Platonic system, (2) the method, (3) the contents of the bewildering hypotheses we have set out to explain.

(1) Plato himself cautions us against setting too high a value on the antinomies of Parmenides. He is careful to explain that he looks upon them as a mere *γυμνασία*, an exercise which, with all its difficulty, is only preparatory to the real work of philosophy. We should make an even graver mistake if we took the *Parmenides* for the complete system of Platonism than is commonly made by those who judge the philosophy of Hegel exclusively by his *Logic*. The purpose of the *Parmenides*, as we have seen reason to believe, is to explain and establish the extremely abstract conception of the world as a system which is the outgrowth of a single principle, and thus to reconcile its unity with its diversity. Important and essential as this task is, it is however merely introductory to the real work of the philosopher. Philosophy is not complete until the conception of the world as abstract system has been made con-

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crete by a full examination of the actual contents of the world-system and an attempt to arrange them in their order of value. Thus the *Republic* and the other great dialogues which deal on a metaphysical basis with the concrete facts of human life are to the Platonic *Parmenides* much as the *Phänomenologie des Geistes*, the *Aesthetik*, and the *Philosophie der Religion*, etc., to revert to our Hegelian parallel, are to the *Wissenschaft der Logik*. For Plato even more than for ourselves abstract metaphysics was the mere skeleton of a philosophy: to convert the bare bones into the living body you must add not merely a comprehensive grasp of the great concrete phenomena of art and morals, but even a wide personal experience of practical affairs. Philosophy was to gain at least as much as politics from the union of the statesman and the philosopher in one person. And the goal of all speculation was to be the vision of Reality not as a mere system but in its concrete fulness and beauty as the Supreme Good. These considerations, as it seems to me, are not without their bearing on the vexed question of the relative date of our dialogue. In all the greatest works which undoubtedly belong to Plato's maturity and age, the *Republic*, the *Politicus*, and even, according to its full design, the trilogy of which the *Timaeus* is the first part, the metaphysical speculation appears as the mere back-ground and basis for a profound and far-reaching treatment of the more concrete problems of ethics and politics. Not one of these three great works can be described as exclusively, and the first two not even as mainly, occupied with questions of metaphysics as such. And hence it is, I think, at least unlikely that the mere abstract logic of the *Parmenides* should be the product of the same period of philosophic activity as the dialogues above named. Even in the less certainly late *Sophistes* which comes nearest in tone to the *Parmenides* there is a secondary ethical interest which is completely absent from the present work. This suggestion I make however simply for what it is worth.

(2) There is nothing particularly novel about the *method* which Parmenides employs in the construction of his antinomies. Its general principle as stated by him at 135 E—136 A amounts to no more than this, that before affirming a doctrine you should carefully work out in as much detail as you can the various results which follow whether from its affirmation or from its denial. And so stated the method would seem to be little more than an obvious application of common sense. The difference is that Parmenides proposes to do consciously and systematically what common sense only effects unconsciously and by fits and starts. The undertaking is a modest one but perhaps it is all that any metaphysic can hope to achieve. My

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main interest in making this remark is however to point out that we have not in the *Parmenides*, any more than anywhere else in Plato, anything in the least degree like the Hegelian dialectic. There is no conception anywhere in the dialogue of a special connection between metaphysical speculation and a particular method; no systematic presentation of a series of categories as evolved from one another by the stress of an internal necessity. The conclusions laid down are reached by ordinary syllogistic methods from premisses which are supplied at the free will of the speaker. Judged by Hegelian standards many of the processes and the results of this dialectic are what Hegel himself calls them, "purely external[1]." So far as the method employed presents any marked resemblance to any modern philosophic method rather than another, it is not of Hegel's *Dialectic* but of Herbart's *Method of Relations*, the essence of which consists in correcting an unqualified assertion by a specification of the conditions under which it holds good, that we are reminded. On this point I shall have something further to say when I come to discuss the third of Parmenides' hypotheses.

(3) We must take care not to let the name "antinomy" as applied to the reasonings of the *Parmenides* mislead us by its natural association with the procedure of Kant in the *Transcendental Dialectic*. The methods of Kant and of Plato have indeed no further resemblance than the merely superficial one that both proceed in the form of an antithesis. The Kantian antithesis however consists of a parallel proof and disproof of the same proposition: the Platonic of the derivation of contradictory results from what is to all appearance one and the same premiss. Hence the final goal of the one is to demonstrate the equal validity or invalidity, as the case may be, of both thesis and antithesis; that of the other, as it is at least natural to suppose, is to establish one interpretation of the common premiss as against the other. The principle involved is simply that of two rival interpretations of the unity of reality, that is false which leads to the denial of the possibility of knowledge and predication, that true which renders both possible. We have, in Herbartian language, to find out the relations and conditions in which a proposition, which, taken by itself, seems false, becomes both significant and true. A less likely misunderstanding would be to suppose that the true explanation of the phenomenon of contradictory conclusions following from the same premisses is to be found in the purely sophistical character of the inferences by which

[1] Hegel, *Werke* III. 102, XIV. 246. For Hegel's estimate of the dialogue see also VI. 154, XIII. 104, XIV. 240 ff.

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Plato arrives at his results. Such a view of the case is indeed effectually disproved by even a superficial examination of the course of the argument. It is only of one or two steps in the argumentation at the most that we can say that they contain anything like conscious sophistry, and even at these points, whatever may be our misgivings about the validity of the inference, we seem for the most part to detect a serious significance about the conclusions thus reached which forbids us to treat them as mere pieces of verbal ingenuity. Hence I shall assume in my analysis that Plato is almost everywhere serious in his inferences, and that we are intended to gather from the intolerable contradiction between the conclusions of one hypothesis and those of another which is nominally the same some fundamental and all-important difference in the interpretation of first principles.

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II.—ETHICS FROM A PURELY PRACTICAL STANDPOINT.

By Mrs Bain.

When I speak of Ethics being regarded from a purely practical standpoint, I mean not merely as affording guidance for private conduct, but also, and very especially, as the motive power in the hands of the moral teacher who, we must presume, is striving to do at least something towards producing a moralizing effect. Further, I intend to consider shortly Ethics as underlying politics.

Viewed with reference to help obtainable for private conduct and for advice to others, I adhere to the opinion that the method of hedonism, "the direct estimation of pleasure and pain" or "the calculation of the felicific and infelicific consequences of actions"—call it which you will—is much more reliable than any substitute that has been, or indeed could be suggested, and, moreover, that it is the only method we may expect to prove in any degree effective when made use of by the moral teacher.

Here I may explain that I am considering solely secular Ethics, or ethical teaching apart from the questions of reward and punishment after death, put forward respectively as inducement and deterrent. And I am thinking less of the moral teacher as represented by the clergyman of the present day than of future instructors on points of conduct. Whatever may be said as regards a so-called "religion of the future," I trust, as Mr Spencer predicts, that there may continue to exist in the time to come, teachers, preachers, or lecturers, or "one who stands in the place of a minister" (I quote from Mr Spencer's *Ecclesiastical Institutions*) who will descant on the right and wrong, or relatively right and wrong in conduct. I may add that those performing this function ought certainly to be, now and always, exceptionally able and highly instructed.

Before commencing to give a brief review of certain ethical theories and methods from the two standpoints already referred

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to, I wish to comment on what has been said by Prof. Sidgwick and Mr Spencer concerning the difficulties of hedonic calculation. I do not pretend to give an elaborate or exhaustive criticism of these or any other topics. To do so would be impossible, having regard to the number of points to which I wish to refer, and the limits of my paper—which can only claim to be an ethical sketch.

Like most, if not all other utilitarians, I fully admit the debt of gratitude we owe to Prof. Sidgwick for the support he has rendered to our common cause. On the other hand, seeing that our opponents are ready to make the most of weak points in our armour, it appears to me a matter for regret that he should have so strongly emphasized the difficulties of hedonic calculation in his *Methods of Ethics*. I shall give a few instances where, in my opinion, he has over-estimated possible sources of error.

Admitting that different kinds of pleasures and pains are not equally recoverable in idea, I do not agree with him when he says, speaking of "past hardships, toils and anxieties," that they "often appear pleasurable when we look back upon them after some interval," and that it is "the heightened sense of life," accompanying "the painful struggle," that "we recall rather than the pain." In my view, unless our past painful experiences have been of a very feeble kind and have left no distinct impress on the mind—in which case, they could not fairly be called hardships or toils—they are not present to our recollection as pleasurable, but decidedly the reverse. At least we can say that the recollection we have of them is sufficiently unpleasant to sound an unmistakable note of warning for present guidance.

Again, with regard to pleasures, while, as Prof. Sidgwick remarks, we are unable to "represent to ourselves as very intense" "the pleasures of intellectual or bodily exercise at the close of a wearying day," most of us, I should say, are to a certain extent aware of the temporary effect of our exhausted condition; while some may be called almost wholly alive to it, and to the fact that with renewed vigour, the idea of the pleasures will become far more attractive. In any case, I believe that all such temporary exhaustion cannot be held to have a material influence in falsifying our hedonic estimate. Also, while we may not, in a state of "perfect tranquillity," estimate adequately pleasures that have been heightened by "precedent desire, enthusiasm and excitement," having experienced the pleasures as affected by these conditions, it is thus that we remember them—not with the conditions awanting. And we come to realize, in a great measure,

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what pleasures are likely to arouse in us feelings calculated to intensify our enjoyable experience.

To summarize further sources of error mentioned by Mr Sidgwick:—there is "the frequent occurrence of moods in which we have an apparent bias for or against a particular kind of feeling"—in arguing from the past to the future, there are changes in our constitutions altering our susceptibilities, and altered conditions of life and years added to our existence modifying or killing old desires and aversions, and generating new ones. To the first of these difficulties we may, at least, add a qualifying remark of a kind very similar to that already stated in connection with the preceding examples. We may reply that, at any rate, the more reflective amongst us *do* take into account, more or less, the bias of particular moods. No doubt, as Prof. Sidgwick observes, the hedonistic calculations of youth require modification as we advance in years; still, even in youth, and more and more in later periods of life, we can recognise how our feelings are affected by changes in our constitution, altered conditions of life, and the experiences of added years; and we become alive—probably to a greater or less extent according to our mental capacity—to the possibility of further emotional change, in the future, generated in like manner. Even the less reflective, while they may be almost if not wholly unaccustomed to make allowance for the bias of their different moods, cannot fail to be, in some degree, cognisant of their altered feelings under the loss or recovery of health, new conditions of life and a longer period of existence; and they must have, at least, some vague idea that the causes which have thus operated in the past will not remain inoperative in the future. In making calculations with regard to our future lives, we certainly cannot have any distinct idea of how far our feelings may come to be altered; but, on the other hand, we are not unaware that a certain change may be expected, and not infrequently we can foresee circumstances which, we know, must inevitably influence our sensibilities. In not a few cases, however, beyond later youth, there can scarcely be said to be any pronounced change of feeling. Moreover, those of us who are habituated to self-examination and thoroughly versed in our own peculiarities may even anticipate, to a large extent, how we shall be affected by an entirely new set of circumstances.

But all this refers to what Mr Sidgwick, I understand, was the first to call egoistic hedonism; and it is with universalistic hedonism—to use his contrasting phrase—that we are mainly concerned. For my own part, I consider, as has been elsewhere maintained, and indeed is admitted by Prof. Sidgwick himself,

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that our hedonic calculation is very rarely, if ever, purely self-regarding. Consequently I hold that we are not justified in asserting that there is a distinct egoistic hedonism. But setting aside this point in the meantime, let us look to what Mr Spencer argues, in the *Data of Ethics*, with reference to the difficulties of universalistic hedonism.

"If," he says, "the dictates of universal hedonism are to be fulfilled, it must be under the guidance of individual judgments, or of corporate judgments, or of both. Now any one of such judgments, issuing from a single mind, or from any aggregate of minds, necessarily embodies conclusions respecting the happiness of other persons few of them known and the great mass never seen. All these persons have natures differing in countless ways and degrees from the natures of those who form the judgments; and the happinesses of which they are severally capable differ from one another, and differ from the happinesses of those who form the judgments." Again, "making general happiness the immediate object of pursuit implies numerous and complicated personalities, officered by thousands of unseen and unlike persons, and working on millions of other persons unseen and unlike. Even the few factors in this immense aggregate of appliances and processes which are known are very imperfectly known, and the great mass of them are unknown."

In the first place, as Dr Bain and others have contended, we have to recollect that, in making ethical calculations in respect of general happiness, we are not required to go into those minute details which the individual has to consider in determining his own daily and hourly conduct: it is not every action, but general lines of conduct we have to take into account. Further, the thoughtful moralist *is* alive to the main disparities in human nature, the leading character-effects resulting from the diverse circumstances of life, and the changed aspect which things assume at different periods of our existence. And being thus cognisant, he will make wide allowances accordingly.

In an article in *Mind*, in 1883, in which he reviewed Mr Leslie Stephen's *Science of Ethics*, Dr Bain, after alluding to Mr Sidgwick's rendering of the difficulties of hedonic calculation, concludes as follows:—"In affirming the impossibility of a Hedonistic Science, the fact is overlooked that science has many degrees. The termination of the human race will not see a science of Pleasure and Pain made as definite as the sciences of Heat and Chemistry; but we may conceivably improve upon the crude statements of the unscientific multitude, and every such improvement is so much

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science." In my opinion, an ethical teacher of the type I have suggested, a man of special ability and training, a scientific student of the facts and laws of the mind, could conceivably improve greatly on the crude statements and ideas of the multitude.

While I consider that both Mr Sidgwick and Mr Spencer have insufficiently qualified their arguments, I quite admit that the diversities in character and the vast complexity of human life will continue to render hedonic calculation a matter of much difficulty, and no small uncertainty. On the other hand, and above and beyond all this, there still remains the fact that we have no rival ethical road which leads to more trustworthy conclusions; but distinctly the reverse.

In endeavouring to substantiate the foregoing conclusion, I must, of necessity, go over ground already traversed again and again; but I shall try to condense as much as possible, and to confine myself to the ethical systems and solutions that have come to the front in more recent years. And I believe I may lay claim to a certain amount of originality in examining the alternative theories and methods, not from one standpoint only, but with two clearly defined and practical aims in view,—*i.e.* the greatest accuracy practicable, and the largest amount of influence likely to be effected when the ethics is made use of by the moral teacher.

I speak of considering theories as well as methods for the reason that the first ethical theory to which I have to refer, as held and represented by its adherents generally, cannot be said to provide any method at all. I allude to the self-realization theory.

That this would-be solution of the ethical problem was no solution whatsoever, has always appeared to me so manifestly patent that I have never been able to understand how clear-minded students could possibly regard it in any other light.

Let us look first to what is said by Prof. Edward Caird in his little book on Hegel, in the Blackwood Philosophical Series. Here he talks as if self-realization were synonymous with self-abnegation (which, indeed, may be inferred from Hegel's own pronouncement). But if, in order to realize self, we have to abnegate self, surely this is something like a contradiction in terms, besides being a practical impossibility. From the general tenor of Prof. Caird's remarks, we may suppose, however, that the self-abnegation is not complete abnegation; although whether it means self-sacrifice carried to the utmost extent possible, is not easy to determine. If it is merely meant that we should suppress egoistic desires distinctly opposed to the general wellbeing, this is only what utilitarianism

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enjoins, and would be approved of by all schools of moralists. But judging from the defensive attitude which Prof. Caird assumes in alluding to asceticism, and his references to the renunciation or death of the natural self, we may conclude that the self-abnegation is to be carried much further. If so, as Mr Spencer shows, in his famous and admirable treatment of Egoism and Altruism in the *Data of Ethics*, such abnegation is highly injurious to self, and also operates very injuriously upon others.

Further, we may infer, from somewhat rhapsodizing and obscure passages by various writers, that self-realization means the striving to attain to perfection. Here, again, we are asked to attain to the unattainable. We may presume, however, that what is meant to be understood is to strive in the *direction* of perfection. Well, as a utilitarian I must necessarily hold that perfection is only definable in terms of happiness: in its subjective form, the sum of the qualities which, when called into play, are most conducive to the general wellbeing or happiness; and in its objective form, conduct most conducive to the general happiness. After remarking that "conduciveness to happiness is the ultimate test of perfection in a man's nature," Mr Spencer justly argues:—"To be fully convinced of this, it needs but to observe how the proposition looks when inverted. It needs but to suppose that every approach towards perfection involved greater misery to self, or others, or both, to show by opposition that approach to perfection really means approach to that which secures greater happiness." To attempt to go into the arguments advanced by those later moralists who define perfection in other than terms of happiness would mean to exceed the limits of this article. For the present, I must confine myself to the bare assertion that I regard them as palpably untenable. If, then, we are to conclude that striving towards perfection is merely another rendering of the utilitarian end, we have not advanced a single step further. Not only so; we have to return to a rendering less intelligible, and thus more apt to create confusion of mind. In connection with this last consideration, and taking into account recent tendencies in ethical discussion, I have to add that it has now become a primary necessity in ethics to adopt, as much as possible, clear, readily comprehended language.

Two other meanings extricable from the mists of Neo-Kantian and Neo-Hegelian phraseology are the following:—that to realize the rational self is to do what is reasonable and right, and to realize the social self is to have regard for the claims of others. But if the self-realization formula cannot be held to afford us any further enlightenment than this, we have

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here simply an example of arguing in a circle. It is almost superfluous to add we have always known that we ought to do what is reasonable and right and to have regard for the claims of others; the questions we seek to answer, or rather to answer as far as possible being:—what *is* reasonable and right in the multitudinous circumstances of life, and what in those same circumstances *are* the just claims of others, as compared with the just claims of self?

A propos of the claims of others, it is possible to infer from the language of the self-realization school—which rarely, if ever, admits of clear inference—that what is being advocated is, that we should do as much for others as we do for ourselves. If so, like the incitement to the utmost self-sacrifice possible, this means the teaching of an undue and irrational altruism. As Mr Spencer puts it, we "must work first for self, and then for others."

But these last remarks are in a measure digressive. To return to the paragraph immediately preceding. Here I have said in effect that the mere rendering in different phrases of two abstract principles, always and universally conceded (*i.e.* if realizing the social self means due and not undue regard for others) but which have no specific meaning, inasmuch that they afford no clue as to what is reasonable and right under the circumstances of the case in point—whatever that may be—and what are the claims of others in any particular instance, certainly does not supply us with any workable ethical method.

Mr Muirhead, another adherent of the school under review, defines the realizing of the self as "loyalty to the duties of the good parent and honest citizen." But what, in the first place, constitutes the good parent? How much controversy have we had, for example, as to how far parental responsibility should be carried, what duties may and may not be relegated to nurse and to teacher, how the child should be trained morally, mentally, and physically, what the parent ought and ought not to do for him in his more mature years. Again, when we turn to the duties of citizenship we open up an endless field of disputation. In the phrase above quoted we have simply another example of loose expression, affording no tangible help whatsoever. Mr Muirhead, however, seems to be, at least so far aware of the nakedness of the land, for he gives us a certain amount of additional guidance in his *Elements of Ethics* that may possibly be construed into something like a method. Following the example of Mr Leslie Stephen when he tells us in his *Science of Ethics* that what is required, or desired of us is to be strong, to be brave, to be temperate etc., Mr Muirhead tabulates the virtues we ought to cultivate.

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But this, or indeed any conceivable list of virtues cannot, in itself, supply us with reliable or adequate guidance. As nearly all our ethical writers have admitted, the virtues are not to be accepted without considerable reservation (for my own part I should say much reservation). For instance, it is repeating an ethical commonplace to say that a strict adherence to truth may, in a number of cases, lead to ultimate decrease of the sum of happiness. Then suppose we are told to act in accordance with justice. What is just under one set of circumstances is not just under other circumstances; while, as we have all had ample occasion to realize, men's notions of justice, even under like circumstances, differ immensely. Further, we can have no hard and fast rules concerning, say temperance and courage, which are not liable to modification, according to the particular circumstances of the case, the facts of individual temperament, relative strength and weakness, sex etc. And as to filial piety and patriotism (included among Mr Muirhead's moral virtues) there is as widespread confusion of mind with regard to filial as to parental duties; while patriotism not unusually means undue laudation of ourselves, and regard for our own interests at the expense of those of other nations.

Then let us turn for a moment to the standpoint of probable influence in moral teaching. The bare injunction by teachers of morality to conform to the virtues, with no attempt to point out the consequences of actions, could not possibly have any material effect upon their hearers. But to that I shall advert later on.

Mr Spencer's *Ethics* next claims our attention. Before proceeding to criticize shortly the method, or rather methods which he advocates as a substitute for direct hedonic calculation, I wish to make a few references to his ethics as a whole. In the midst of so much ethical writing which is vague, obscure and with little or no practical outcome, Mr Spencer's *Ethics* is always to me in the highest degree interesting and refreshing. In reading it we perceive that we are to encounter no pandering to received views: here we have the thoughts of a fearless thinker, fearlessly uttered. But much more than this can be said of Mr Spencer's ethical work. While I consider that the same conclusions could have been arrived at irrespective of the teachings of Biology, this does not alter the fact that by his wider ethical calculation in particular, but also by a number of his minor estimates, he has rendered most valuable service to his subject. I have already alluded, more than once, to the masterly fashion in which he has struck the balance between the claims of others as a whole, and the claims of self as a whole. But, I may add, that the value of

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this is in great measure due to its being a salutary antidote to altruistic sentimentality—a sentimentality which so many have either pretended to believe, or have honestly thought they believed, but which has never been carried into practice—unless perhaps to a very partial extent by the Positivists: the complete practice of it being, indeed, an impossibility under the existing conditions of life. Again, Mr Spencer more, I may say far more than any other moralist insists on the taking care to preserve health being a primary moral obligation; and that the knowing or preventable disregard of it must be held highly culpable. And that too, for example, if a man has overworked himself to obtain increased comforts for wife or children, or others endeared to him: the goodness of his motives does not prevent the consequences of his death or breakdown in health being much more injurious to those connected with him than the want of the comforts that have necessitated his undue exertion. Then Mr Spencer among moralists may be called the most thoroughgoing exponent and defender of the warrant which ethics gives in favour of reasonably estimated pleasures, not of course taken to excess, as opposed to ascetic abstinence. Once more, and to summarize, Mr Spencer furnishes us with a number of very useful suggestions in his *Ethics of Individual Life*, his Justice and what he says with regard to the exercise in different directions of a "rational beneficence" ("negative and positive") and the avoidance of an irrational beneficence—*i.e.* a beneficence that, in the long run, is more hurtful than beneficial. Of the last of these suggestions or conclusions Mr Spencer says, in the preface to his latest volume on ethics, that "the most of them are such as right feelings, enlightened by cultivated intelligence, have already sufficed to establish." To this I demur. A certain small proportion of them may be said to be somewhat doubtful; but, as to the greater number, while they may have been, for the most part, apparent to the reflective few, so long as they are not more widely perceived, they cannot fairly be held to have been established. Indeed, the mere fact that Mr Spencer considers it expedient to publish them is, in itself, highly presumptive evidence in this direction. A certain critic, Prof. Mackenzie I believe, stigmatizes them as commonplaces; but this stricture I regard as undeserved.

Now to turn to the methods which Mr Spencer argues should take the place of a direct estimation of pleasure and pain. For our conduct towards others, excepting that section of it which would come under the designation beneficence, he proposes to substitute justice for happiness as the immediate aim of action, "the maintenance of equitable relations between men being the condition to attainment of greatest happiness

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in all societies." Subsequently however, he says:—"it is impossible during stages of transition which necessitate ever-changing compromises to fulfil the dictates of absolute equity; and nothing beyond empirical judgments can be formed of the extent to which they may, at any given time, be fulfilled."

Taking into account all that is involved in these empirical judgments, Mr Spencer's own charge of "indefiniteness," brought against hedonic calculation, can be used with much force against the compromises to which he refers. Moreover, these empirical judgments must themselves be formed simply by a direct estimation of relative pleasure and pain.

That we are warranted in applying the objection of indefiniteness to Mr Spencer's system becomes still more apparent when we look at what he says regarding conduct as a whole. He holds that in order to ascertain what is right in our present stage of moral evolution, or what is relatively right, we have to settle—again to settle in a rough empirical manner—how far "ideal ethical truths expressing the absolutely right" or "that which produces pleasure unalloyed with pain" and suitable to an ultimate social state or "completely evolved society" is applicable to human beings existing at the present time. But it is only to a very limited extent that Mr Spencer himself points the way to an ideal and ultimate morality; and according to this plan, we should have to encounter all the difficulties involved in formulating the details of the absolute ethics, along with the uncertainty of decisions on the nearest approximations suited to the time when the formulation is taking place, and its more immediate future. Further, Mr Spencer has to reckon with the contention (Prof. Sidgwick's I think)—which, in my view, is a perfectly just one—that we cannot have such certainty, that the sociological evidence does not warrant us in having such certainty with regard to an ultimate social state that we could frame a conception of human conduct as carried on in that state, or a code of morality applicable to it.

Shifting our consideration to what influence may be produced in moral teaching, let us look to a certain well-known passage in one of the earlier chapters of the *Data of Ethics*.

"The truly moral deterrent from murder," writes Mr Spencer, "is not constituted by a representation of hanging as a consequence, or by a representation of tortures in hell as a consequence, or by a representation of the horror and hatred excited in fellow men; but by a representation of the necessary natural results—the infliction of death-agony on the victim, the destruction of all his possibilities of happiness, the entailed sufferings to his belongings. Neither the thought of punishment, nor of divine

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anger, nor of social disgrace, is that which constitutes the moral check on theft; but the thought of injury to the person robbed, joined with a vague consciousness of the general evils caused by disregard of proprietary rights. Those who reprobate the adulterer on moral grounds, have their minds filled, not with ideas of an action for damages, or of future punishment following the breach of a commandment, or of loss of reputation; but they are occupied with ideas of unhappiness entailed on the aggrieved wife or husband, the damaged lives of children, and the diffused mischiefs which go along with disregard of the marriage tie. Conversely, a man who is moved by a moral feeling to help another in difficulty, does not picture to himself any reward here or hereafter; but pictures only the better condition he is trying to bring about. One who is morally prompted to fight against a social evil, has neither material benefit nor popular applause before his mind; but only the mischiefs he seeks to remove and the increased well-being which will follow their removal."

In the above passage, we see that the picturing of the results of conduct, as productive of woe and weal to others, is presented as the only moral inducement to avoid doing what is wrong, and to do what is right. It follows then, from this conclusion, that the more people realized the unhappiness and happiness that might be expected to result from the opposed modes of conduct, the more would the moral inducement be enabled to influence their minds. And this, I contend, establishes, from Mr Spencer's own point of view, the case for the adoption, in practical moral teaching, of a direct demonstration of the resulting pleasurable and painful effects of our conduct.

I have to make one other allusion to Mr Spencer's Ethics. He defines the rational utilitarianism to which he adheres as deductions from laws of life and conditions of existence as to "what kinds of action necessarily tend to produce happiness and what kinds to produce unhappiness"; "which deductions are to be recognised as laws of conduct, and are to be conformed to irrespective of a direct estimation of happiness and misery." Well, most assuredly, I consider that the conditions of existence, and such unquestionable or thoroughly ascertained conclusions as may be called laws of life, should be held in mind and put before their hearers by teachers of morality. At the same time, I believe that, unless in the case of the simplest or most widely obeyed of those conditions and laws, it is necessary to trace the effects of conformity and nonconformity to them. It is thus, and thus only, that any real influence can be effected. Moreover, if we were to dispense with a direct estimation of happiness and misery, we should simply be

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forging fresh fetters for the human intellect. It is only by our being able to apply the utilitarian test, and thus to *call in question* traditional, generally received, or evolutional precepts that we can preserve ethical freedom of thought. Otherwise, our ethics might, for example, degenerate into the stationariness of Confucianism, and of all sets of dogmas regarded as infallible.

To continue the examination of evolutional Ethics, Mr Leslie Stephen, in his *Science of Ethics*, maintains that efficiency of the social organism should be regarded as the direct end of conduct; and that the only general criterion of efficiency is that "health which would include the right working of all the functions—the intellectual and the emotional as well as the purely animal."

But supposing, in a system of ethical teaching, people were merely enjoined to strive towards the attainment of this health, such injunction, in itself, could not have any marked effect upon them. And the same argument, already applied to Mr Muirhead's list of virtues, can, of course, be made use of, in like manner, with regard to what we may infer is Mr Stephen's completed ethical injunction:—that we ought to be strong, to be brave, to be temperate in all respects &c. &c.

Mr Stephen objects to hedonic calculation on grounds already stated—*i.e.* that of its indefiniteness—but he also objects to it because, he argues, it fails to consider the effects upon the individual of the existing social structure or type of society, and of changes in the social structure; and again individual conduct as affecting the type of society.

This criticism applies merely to a restricted utilitarian estimate, and not to one sufficiently wide; which means one that includes the consideration of all the main influences affecting general happiness at any given time, and also ultimate happiness, or the probable wellbeing of posterity.

But Mr Stephen, like Mr Spencer, makes certain admissions which are, in fact, equivalent to an acknowledgment of the necessity of pointing out the good and bad consequences of actions, in moral teaching. He first tells us that he would "say with every moralist who ever wrote that the bare moral maxims will do nothing without a thorough training of the emotional nature." Then he goes on to observe that, "so far to teach me that my conduct hurts others, is to make me feel for others if I am capable of the sympathy." Again he says:—"to learn really to appreciate the general bearings of moral conduct" (bearings of course upon human happiness) "is to learn to be moral in the normally constituted man."

Prof. Sidgwick considers it would be unadvisable to intro-

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duce a purely utilitarian morality. For one thing, he remarks, "it might impair old moral habits, without effectively replacing them with new ones."

But a more systematically utilitarian moral teaching would mean a more and more definite conception of the morality, or tendency to add to the general wellbeing of the old moral habits—*i.e.* if they really were moral habits. And this would have an effect the reverse of tending to impair those habits.

Mr Sidgwick had in view the bringing forward of exceptions to received rules of morality; but it does not appear to me that fears on this score need be entertained. To illustrate:—let us suppose the ethical teacher to make it much clearer to the many how, speaking generally, truthfulness, fidelity to promises, engagements or bargains, self-control, temperance and courage are conducive to the general welfare. If, along with this justification of the prevailing views, he were to instance cases where it was expedient to disregard truth, promises, engagements and bargains, how self-control, temperance and courage might be overdone, such frank admission, while mentally stimulating, would not, I conceive be morally hurtful but the contrary: they would conduce gradually to the acquisition of more trustworthy moral sentiments. I do not, however, mean to approve of the drawing of highly refined and subtle distinctions. These would only cause perplexity, and, indeed, might, in some degree, undo the influence of the simpler instruction.

In common with Mr Stephen, Mr Sidgwick further maintains that estimates of happiness and unhappiness made at any given time would probably prove erroneous guidance, for the reason that human nature and the conditions of life are undergoing change or modification. This, however, applies only to a fixed or established utilitarian code—a thing I have no intention of advocating.

Prof. Sidgwick argues that it is expedient to conjoin a purely utilitarian Ethics with common sense morality—*i.e.* the generally received views on ethics. In my opinion, the conjunction is defensible in so far as it means that the scientific hedonist must take into account and point out the social and pecuniary risks that running counter to the received views, in certain directions, would probably, at any given time, involve; and when it may be expedient, having regard to individual circumstances, that such risks should not be run. Also, while approving of, and thus paving the way to whatever social changes an unqualified application of the utilitarian test might require, he must dwell on the necessity for co-operation in the carrying out of certain changes: and that without co-operation,

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these need not be attempted (unless, for instance, by some rare individual possessed of great social influence, or of commanding ability, unusual force of character and physical endurance). This toleration of institutions that accord with the received views, so long as the proposed new institutions have not obtained adequate support, may, along with the preceding instance stated, be held to be effecting a certain compromise with common sense morality; but it seems to me that the compromise should go no further. For example, let us consider the moral sentiments expressed by the average person. That these exhibit looseness, inexactitude and not infrequently distinct error, cannot, I think, fail to be apparent to those habituated to the examination of social and ethical theories. And if this be so, it is, I hold, the office of the teacher of morals not to overlook the errors, but to work assiduously towards their correction.

If the public opinion of to-day has reached a higher moral standard than it attained, let us say, two centuries, or even one century ago—which I certainly believe it has—the improvement must have been effected by the publication and oral expression of moral sentiments in advance of the then common sense morality. Again, compromise in the expression of opinion means for the most part, though not of course wholly, that the convictions of those who think for themselves have, to some extent, to be surrendered to popular prejudice and popular intolerance. And in place of condoning such surrender, the ethical instructor should endeavour to prevent the need of it: by descanting on the general evils of silencing opinion, and by specific support of such views as may be hedonically approvable, and undeserving of being condemned or tabooed.

Prof. Sidgwick fully admits that common sense morality is only to be deemed reliable in so far as it answers to the utilitarian test. But where it fails to answer to this test—*i.e.* is unreliable—I do not see any adequate reason why we require to bolster it up. Prof. Sidgwick seems to think that a purely utilitarian Ethics would differ little from the prevailing views on morals; and if such were the case, it would justify so far, but only so far, their non-correction. If however, as I believe, the difference is very considerable, and part of it lies in highly important directions, the disregard of it cannot be held justifiable. Moreover, as Mr Spencer observes, there will arise "from the ever-increasing complexity of social life more difficult questions of conduct"; and these, I would argue, will require a searching examination from the utilitarian standpoint[1].

[1] In another paper, I shall give examples of discrepancies between common sense or generally received ethical verdicts, and utilitarian conclusions—as I conceive them to be.

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It is not, of course, to be supposed that I consider that lectures on questions of conduct, however able and well-instructed they might be, should be regarded as infallible guides. Those of the type I have suggested would be the readiest to acknowledge their own fallibility. Besides, each would be subject to the criticism of the other; and all of them to the further and salutary criticism of those members of the general public who may be described as on the higher levels of intelligence.

Space will only permit me to touch, in a word or two, upon Ethics as underlying Politics. Save a small section of politics, which may be characterized as traditional and sentimental, it consists wholly of hedonic calculation, or the estimation of how existing institutions and proposed changes affect, and are likely to affect the general wellbeing. At times, the wellbeing considered may merely mean that of certain sections of the community, or even one section; but if either of the two great political parties endeavours, or seems to endeavour to promote what may be called "class legislation," or to prevent the passing of measures in the interest of special classes or factions, the other, as a rule, will readily point out the restriction, and refer to the wider aim of the general good. In political, as in all sociological questions, there is, of course, much false hedonistic calculation—and no monopoly of accuracy in any one party!—but there is, at least, a systematic turning of attention towards the ultimate and only legitimate end. Mr Spencer maintains, and with considerable justice, that the politician disregards general principles, gives little heed to lessons from history, and looks to near results to the exclusion of the more remote consequences. But even supposing that this criticism were wholly deserved, it would only mean that politicians are too apt to adopt a narrow in place of a sufficiently wide and far-reaching utilitarian estimate.

Yet although the method of politics is the method of hedonism, political parties appoint to Chairs of Philosophy those who repudiate this method—*i.e.* who repudiate that alone by which they, as a party, live and move and have their being. But there is still a more pronounced inconsistency than this: the inconsistency of the repudiators themselves. When they become politicians, they are as ready as other people to resort to hedonistic calculation. And the same thing may be said with regard to their treatment of social questions, and, indeed, the consideration that they give to points of conduct in their daily lives.

The hedonic instruction I am advocating may then be described as a thorough-going demonstration of how modes of

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conduct—accepted modes and proposed changes—may, or may not, be hedonically justifiable. It would include a description or enumeration, as complete as may be practicable, of the probable good and bad, or pleasure and pain-productive consequences of our actions, particularly as they affect others—how the repetition of the same modes of conduct leads to the formation of good and bad habits, and how these act and re-act upon our more immediate associates, and, in less degree, on others with whom we come in contact—the tracing of the more distant and complicated, as well as the nearer or palpable effects of conduct—individual conduct, and corporate or social action—how the type of society affects the individual, and how individual action may affect the type of society. (This cannot be called an exhaustive definition, but it is sufficient for my present purpose and the limits of my paper.) And the question is:—would a wider, more systematic utilitarian teaching on the lines, or nearly on the lines I have indicated, taken in hand by men of adequate ability and training, be productive of improved results, as regards its moralizing influence? Let us look at the matter, from two points of view; the first of which is exemplified in the aphorism "evil is wrought by want of thought," and the second in the following reply, given by a poacher to a clergyman who asked why he didn't go to church:—"I already knows more than I does." In a measure, we are all, of course, in the position of the poacher, inasmuch that we leave undone a variety of things—perhaps I should say many things—that we ought to do, and do a number of things we ought not to do. On the other hand, it is almost needless to remark, these errors are not incompatible with the fact that increased knowledge and reflection on questions of conduct must lead to improvement in action. Or to put it otherwise, if people in general were made much more clearly and fully alive to the consequences of their conduct, it certainly cannot be supposed that such enlightenment would have no effect upon them.

In conclusion, we may refer to a phrase already quoted, from Mr Leslie Stephen's *Science of Ethics*—"to teach me that my conduct hurts others is to make me feel for others if I am capable of the sympathy." To those who are not capable of the sympathy, no amount of moral teaching will, of course, be of any avail. But for the rest of us, the development of sympathy by the amplest demonstration of how our conduct, directly and indirectly, may injure and benefit others, is doing all that can be done (however slow may be the progress) in the direction of moralization.

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III.—CONSCIENCE.

By Henry Sturt.

A critic writing in *Mind* not long ago remarked, that "to most of those who are seeking to know themselves, conscience appears now as a perplexing abstraction, now as a phantom will o' the wisp; leading them on with momentary flashes of brightness when they give no particular heed to it, but fading indistinguishably into the other constituents of consciousness when they try to fix it with a steady gaze. An analysis which should succeed in grasping the reality and holding it firmly before us until we know it for what it is, would be a welcome addition to the literature of Ethics."

If the prominence of conscience in popular moral philosophy renders it more interesting as a subject of discussion, it certainly has not diminished its obscurity and elusiveness. In common parlance it is often spoken of as an internal monitor, a still small voice divinely given to guide us if we will listen to it. Such expressions remind us of Socrates and his daemon, whose voice made itself heard within him at critical moments of his life. But there is a great difficulty in regarding conscience as a divinely sent monitor of this kind. It is an obvious criticism to point out that the guidance of conscience is not infallible in the best of us; while it prompts fanatics and savages to commit cruelties which are positively atrocious. It is difficult to reconcile this fallibility of conscience with the omniscience and benevolence of its Sender. But a much more serious objection is that this popular notion of conscience would make morality a matter of mere blind obedience. The good man would merely be one who does what his conscience or daemon tells him to do, while the bad man prefers to trust his own judgment. And we must further suppose that no one has any real power to judge between right and wrong. For if we do possess such an intrinsic faculty of judgment, we must have two sources of moral guidance, one truly our own, and the other, conscience, given to us from outside; and

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if the first has any efficacy, the second must be more or less superfluous.

We have by no means exhausted the inconsistencies and absurdities of the daemon theory of conscience, but it is needless to pursue them further. We may or may not admit the possibility of divine guidance and inspiration at specially critical periods of our life; but one's everyday conscience must be a part or faculty of one's very self. When we say in our hearts, "this is right" or "this is wrong," we are not echoing the dictates of an alien voice, but judging on our own responsibility according to the best light that we have. We must drop the external view of conscience, and perhaps drop the term itself to a large extent, as suggesting externalism.

It is due to these considerations that we hear but little of 'conscience" in recent works on moral philosophy. There is a very justifiable tendency to replace it by such terms as moral sense, moral faculty and moral ideal, none of which imply that the guiding principle of a man's ethical judgment is anything independent of his personality. It will conduce to clearness if we use these terms largely in the present exposition. It may be taken for granted now that conscience cannot be understood apart from the rest of our ethical experience. We will therefore proceed to offer some remarks upon the moral faculty in general, and then return and try to give definiteness to those phrases and notions of popular moral philosophy in which "conscience" plays so prominent a part. If then we observe the moral faculty as we see it manifested in our fellow-men, the following remarks may be made:—

Firstly: moral judgments are reached by a sort of intuition, not by a process of abstract calculation and ratiocination, as when we are working out a mathematical problem. When a wise and conscientious man is hesitating what to do in a difficult case, he does not look for help to abstract maxims and ethical formulæ. He decides by a sort of instinct, partly natural, partly the fruit of training, as one settles a point of good manners. If pressed to give reasons for his action, he would probably fail to state them in strictly logical terms. He would quote examples and analogies, and perhaps clinch the matter by expressing his conviction that any other course than the one he adopted would have been unworthy of him. In moral deliberation what we generally do is to represent ourselves as doing the action, and to realize as clearly as possible all its consequences. Then we decide according as it harmonizes or clashes with the general system of our conduct.

Moral judgments then are formed by a process essentially inexact. And this leads us on to remark that they are by no

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means infallible. Many atrocious practices among savage races are undoubtedly dictated by conscientious motives, as for example, the solemn murder of aged parents common at one time among the New Zealanders. While in the matter of religious fanaticism, it is hardly necessary to do more than mention the cruelties of the Spanish Inquisition, and, in our own day, the scruples of the Peculiar People, who think it wrong to call in medical assistance for their sick. But these are extreme cases of the fallibility of the moral judgment. Every one in his own experience must have met conscientious but wrong-headed people who persist in mistaken and disastrous courses of action from the most excellent motives.

Another characteristic of the moral faculty is its capacity of growth and change. In young infants we see no trace of it; but it begins to develop at a very early age. Very soon we see that children feel shame at being found out in wrong-doing. And from the time when shame is first apparent, the moral faculty goes on growing and shaping itself into such forms as the child's character and opportunities determine. That the moral faculty changes among men and women is an equally well-known fact. An unfortunate alteration in circumstances often produces a marked moral deterioration. A drunken husband, loss of property, exile, a thoughtless lapse from virtue, are often the occasions which lead to an all-round debasement of the moral ideal. While, on the other hand, an improvement in circumstances may have an equally notable effect in the right direction. In religion these moral regenerations are especially striking. When a sinner is sincerely converted, his conscience shows the change more than anything. It condemns the old courses which he loved, and enjoins the works of righteousness which he despised.

It must not be supposed from the foregoing remarks that we wish to exaggerate the variability and untrustworthiness of the moral judgment. The most superficial cynic is bound to admit that in many ways we rely upon its regularity and steadiness with the most entire confidence. Even in the case of bad men we have often no hesitation in predicting how they will act and judge in such-and-such moral contingencies. But much more regular and much more predictable is the moral judgment of good men. About our intimate friends who lead steady virtuous lives we usually feel the most absolute confidence in reckoning upon their moral judgment. We feel the most absolute certainty that they will praise a noble action and condemn a base one. We can not imagine that the ideals which have regulated their past lives, should be flung aside in a moment of caprice.

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Such are the main characteristics of the moral faculty which concern us at present, so far as they can be observed by studying the conduct of others. From them we are entitled to say what the moral judgment is *not*, though we may not yet be able to say precisely what it is. In the first place, it cannot be exact and certain with the exactitude and certainty of mathematics. Its variableness and fallibility are only too plainly apparent. Geometry tells us that parallel lines will never be seen to meet; and this holds good for all observers without respect of place or time. But conscience proclaims no laws that are axiomatic and eternal. In the second place, the moral judgment is not capricious: with most men it is remarkably regular and steady. Men do not change their standard of right and wrong as readily as ladies change their standard of what is becoming in dress. Conscience is not a synonym for wilfulness.

From the steadiness of the moral faculty we must now draw a further conclusion, *i.e.* that there exists in the mind some solid reality to account for it. Each act of moral judgment does not spring isolated out of the self, like a flash of lightning, with no traceable relation to the acts that precede or follow it. On the contrary, taken together, they may be seen to form a coherent, orderly system, whose plan we can trace and understand. And to explain this regularity and permanence of the moral functions, we must suppose that in the mind of each of us there exists a sort of permanent moral structure.

To discover what this permanent factor of morality is, we must quit the attitude of outside observers and look within our own breasts. As soon as we do this, we come upon what is really the central fact of ethical experience; we see that our conduct is regulated by a moral ideal. This ideal is not a collection of general rules and maxims applied to regulate one's personal scheme of life in the way that a legal code might be applied in courts of law. It is rather an image of the sort of man each of us thinks he ought to be in the ethical relations of life. When we fall short of our ideal we are ashamed; when we live up to it we are satisfied with ourselves.

We have called the ideal an image; some such word seems appropriate to express its concrete, quasi-pictorial character. But we must be careful of pressing the phrase too far. Such metaphorical expressions are very inadequate to the subtlety of the spiritual life. We must not suppose that everyone carries before his mind's eye a clear-cut model of the self he wishes to live up to. A few people no doubt do picture their ideal in its details with much precision. But most of us see it in a sort of twilight with wavering and scanty outlines.

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While with people of dull imagination and limited faculty of expression it is difficult to see what their ideal is, much more to get them to give an intelligible account of it. But all the same, wherever there is morality, there a moral ideal must be operative. Without it we can have no shame, no scruples, no sense of sin or obligation. For in these, as in all other characteristic facts of ethical experience, the essential feature is that one has an idea of one's better self, and then compares it with the self of one's actual conduct.

There are two possible misunderstandings of the foregoing remarks which it is worth while to guard against. The first is that the possession of a moral ideal implies an exalted standard. It is certain that the ideal of a savage in many cases includes theft and murder. It is equally certain that the ideals of a great many Englishmen do not include the virtue of chastity. Most of us remember J. S. Mill's famous remark that the poor in all countries tell lies, but that the English poor alone are ashamed of detection. This we understand to mean that only in England does veracity find a place in the average working man's ideal. Of course the Continental working man would not admit the truth of Mill's statement. In many such cases we have to pierce beneath a certain crust of imposture and self-deception. We have to distinguish between what people really think right and what they say they think right. We must not suppose that all who give a verbal assent to the principles of the Sermon on the Mount have any practical intention of turning the cheek to the smiter, or desire to be the objects of public contumely and persecution. We must also distinguish between what people think right for others and what they think right for themselves. An African negro who sees no harm in robbing his neighbour, becomes very indignant when his neighbour robs him. There are many sorts of moral ideals; and those of the savage, the philanthropist, and the criminal, differ considerably in their respective contents But so long as a man is a moral agent at all, some sort of permanent ideal he must have; and we must not refuse it the terms "moral" and "ideal" because it differs largely from our own.

Another misunderstanding to be guarded against is the tendency to connect ideals with an elevated but vague enthusiasm for something entirely out of our reach. Taken in this sense, the term is somewhat overworked at the present day. In conversation and popular literature an idealist appears to be one who is permanently dissatisfied with the existing order, and cherishes a longing for something better, which however is seldom capable of being stated in definite terms.

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Again, in many works of moral philosophy the Ideal denotes absolutely right morality, or conduct such as we should pursue if we and all our surroundings were perfect. The Absolute Moral Ideal in this sense is of course a perfectly legitimate conception, and indeed a necessary one, if we intelligently believe in God and in an end to which our imperfect earthly morality is tending. But this Absolute Ideal is not part of our everyday life, but a sublime aspiration of religious minds. It is an object of faith rather than of understanding; it supplies enthusiasm rather than guidance. It does not admit of definite description. Nay, in the hearts of the weaker brethren we shall look for it in vain. The moral ideal we are speaking of now is the Personal Moral Ideal; not a conception which belongs exclusively to a few superior persons, but the principle which regulates the conduct of the meanest tinker who can be called a moral agent at all.

In the way it works to regulate our conduct, the moral ideal resembles very closely other ideals which are not moral. We have for example an ideal of personal appearance. Every man has vaguely or distinctly a certain model or standard of dress which he does not care to fall short of. If by any neglect or lapse of memory he deviates from it, if for example he finds himself in some public place got up in a manner he would admit to be entirely unsuitable, he feels ashamed. Here, as in morality, there must be a standard or model in the mind in order that the actual may be approved or condemned. Where there is no ideal, there is no shame at dirt or nakedness, as in the case of lunatics and very young children.

The question why a rational agent must have a moral ideal would lead us somewhat aside into the theory of the general structure of the mind. We may remark that in all cases of desire, where we act as fully rational creatures, we form a sort of image of ourselves as in a state of fruition; it is this image which stimulates us to action, and we feel satisfied or disappointed according as we attain to the desired state or fall short of it. Now this applies to the sphere of moral conduct as well as to any other sphere of human activity. Here, as elsewhere, we form an image faint or clear, of ourselves as acting for the best. This image systematised, solidified and rendered permanent by habit and repetition becomes what we call the moral ideal.

The question how the moral ideal forms itself would compel us to diverge into a discussion of moral education and the influence of environment upon the growth of character. We know that in earliest childhood the moral faculty, like all the higher faculties, lies dormant. But very soon it begins

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to wake to life. A rudimentary sort of moral ideal is traceable in the minds of quite young children. The proof that it is there is that they are capable of shame.

This brief account of the part which the moral ideal plays in our ethical life is enough to enable us to give definiteness to popular phrases and notions about conscience. One of these phrases is that such and such a man has "no conscience." This is not as a rule to be understood literally. If it were, it could only mean that the man was not a moral agent at all, that no ideal regulated his conduct. This complete moral impotence is found only in lunatics and very young children. In such minds there is not creative force enough to project and sustain an image of the better self. They have impulses, perhaps desires, but no settled system of desires.

Speaking of people who have no conscience leads one to ask where exactly in the scale of vital development conscience and the moral ideal emerge into light. Can we say that the higher animals, dogs for example, are moral agents? Or is there something in the nature of an animal which precludes it from forming a moral ideal? It does not seem possible to answer such a question dogmatically. It is certain that a jelly-fish is not a moral agent; and very likely there may be traceable a series of life-forms without a break from molluscs upwards to man. But without special researches we cannot say at what point the moral faculty begins to shew itself. Many of those who have loved and studied dogs claim that they possess conscience. It may be so; but is this canine conscience really of the same nature as our own? It is not enough to prove that dogs form praiseworthy habits, check their natural impulses to act amiss, and shew susceptibility to praise and blame. It must be proved in addition that they can form some notion of a better self, and that this notion is what regulates their conduct. We feel the same difficulty of drawing a definite line in deciding when children become capable of moral action. There is the same kind of wonderful and gradual development of the human soul and its faculties and powers as that which proceeds in visible form when a seedling passes by imperceptible stages into a tree. There is no leap or break in the change; but when the moral faculty has reached its full growth, a new phenomenon stands revealed before us. It is not resoluble into the simpler forms that preceded it; though we cannot say at what point it first came in.

To return however to the people who have no conscience. As we have said, the description is not as a rule to be understood in a literal sense. It denotes a partial, rather than a total moral deficiency. An absence of moral scruple in regard

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to some particular kind of offence is sometimes the result of congenital malformation. Such for example are kleptomaniacs in the matter of stealing. Such persons are not regarded as fully responsible for their actions. Their aberrations are due to defects of the nervous system rather than to bad intentions. In many of the relations of life they may be up to or beyond the ordinary moral standard. But their constitutional flaw makes us feel towards them as we feel towards criminal lunatics, and regard them as fitting subjects for merciful restraint rather than punishment.

There remains now the commonest meaning of the phrase "to have no conscience," *i.e.* as it is used of a man, who, though fully responsible for his actions, is quite without scruples on certain points of conduct. This may be accounted for in more ways than one. The precise content of a man's moral ideal is of course determined partly by character, partly by environment. The latter is often unfavourable to the culture of certain virtues. In West Africa the tone of native society is not conducive to veracity; and the tone of Fagin's coterie as described in *Oliver Twist* was not conducive to honesty. A man forms his ideals mainly from those with whom he lives; and when the social standard is low, the individual ideal will seldom rise above it.

Just as the individual is determined in his moral ground-plan by the standard of his society, so he is in details influenced by his profession. Every profession has in fact a generally recognised tone or standard of practice which operates with surprising uniformity upon its members; and the result is that even upon men of the same social stratum we find an assortment of moral ideals which might be arranged into widely-varying species. In common conversation we speak of the legal conscience, the clerical conscience, and the stock-exchange conscience. These would all present many differences if compared in respect of any one virtue, say veracity; and each of them has a very distinctive idea as to what is meant by sharp practice and by straightforward dealing.

But apart from professions, there are plenty of curious idiosyncrasies among the moral ideals of ordinary laymen. It is surprising how many respectable members of the upper classes seem to feel no qualms, but rather pleasure, in cheating on a small scale, particularly if the victim is a railway company or a custom-house officer. It is needless to multiply examples of the kind, the judicious student of human nature will readily supply them for himself. The difficulty is in any given case to decide whether these defects in the moral ideal are due to bad training and example, or to native obliquity of character.

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Altogether then it is rare to find a character without serious moral gaps and inconsistencies from one cause or the other. And yet it is certain that gaps and discords of every kind are abhorrent to the well-developed mind. Just as in the sphere of knowledge contradictory assertions are disagreeable to the logical sense, so moral inconsistencies offend the well-trained moral sense. To a man not wholly callous an abrupt transition from virtue to vice is felt as a shock and a violation of the system of his life; and discovery and punishment intensify and externalise the discord. Thus as we rise in the scale both the influence of our environment and the native systematising instinct of the mind induce us to round off our moral ideal and bring all its parts to harmony and order. Those in whom this process has been thorough are the men of high morality, the men of well-trained and well-developed conscience.

We may now approach the consideration of a rather different set of phrases about conscience. We have seen that each man has his ideal and that good conduct for him consists in living up to it. We have now to consider the fact that the ideal can put no compulsion upon the man. In the exercise of his moral freedom he can choose to identify himself with it, or to reject it. This is what is meant by "disobeying conscience;" we know the right, but will not do it. This deliberate open-eyed kind of sinning is not the commonest form. The evil-doer most often sophisticates his judgment, half shuts his eyes to the light, half persuades himself that his practice does not really conflict with his ideal.

The contrary of this part careless, part vicious frame of mind is seen in the man of "tender conscience," who has the habit of testing his conduct by comparing it with his ideal, and making sure that the ideal is sound by comparing its various elements with each other. Among the men of finest moral temper this task is performed spontaneously. But most of us, though not exactly bad, are yet not good enough to live up to our ideals without a certain amount of external pressure. Without the fear of that punishment which commonly follows a lapse from virtue, our ideal would be apt to grow weak and indefinite. The voice of conscience needs to be reinforced by the voice of self-interest.

The task of making our practice conform to our ideal is by no means a mechanical one; it cannot be performed by means of fixed rules unintelligently applied. New cases crop up from day to day and no combination of circumstances repeats exactly any that preceded it. The thoroughly successful application of the ideal to practical life requires a fine per-

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ception of analogy, such as is found only in minds of a superior order. Here it is that art and morality have perhaps their closest affinity. The tact and taste which enable us to pronounce on the merits of artistic workmanship have much that is akin to moral judgment. In both cases the standard or ground of appreciation is the ideal in our minds, applied with a combination of insight and sympathy. An upright conscience might indeed, from one point of view, be described as good taste in morals.

Another point in which morality is like art is that in both one may carry scrupulosity to excess. Occasionally among artists one meets a man who sets up for himself too exacting an ideal of workmanship, and is always self-reproachful and dissatisfied with what he achieves. Such in morals is the man of morbidly sensitive conscience, the man whose self-examination is so minute and painful as to impair his efficiency as a working member of society.

We remarked just now that it is not a common thing to see a man acting in deliberate, open-eyed contradiction to his ideal. The fact is that no ideal can long withstand such treatment; it is speedily weakened by neglect. Consciously or unconsciously the man loses his ideal; what he reverenced once, now commands a mere lip-service at the most. The ideal which actually governs him, the type of conduct he really approves, is something different and inferior. Such a change of heart is of course the greatest moral calamity a man can suffer. As the religious moralists express it, the voice of conscience has ceased to warn him; the divine Umpire in his heart is dumb; the Holy Spirit has been withdrawn from him. Or, it is otherwise expressed by saying that the man has lost the sense of shame; that his conscience is seared and has ceased to feel. He is in fact a hardened sinner, and his sinning is followed by no remorse.

The subject of remorse and penitence is so closely akin to conscience that a word or two on it may not be out of place. "Conscience-stricken" and "remorseful" are terms of almost identical meaning; and it is "conscience" which calls on us to repent. These phrases seem to find their meaning in relation to the man who is conscious of having violated his moral ideal, but has not yet given it up and descended to a lower level of moral life. Those two contrasted opposites, himself as he knows he should be and himself as he is, clash and conflict within him. Remorse is the name for the more acute phases of this state of feeling; while penitence is a thorough renunciation of evil courses and a resolution to return to the ideal. Remorse then is a fairly definite state of mind.

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Before he sinned the man enjoyed the self-respect and peace of mind which is the fruit of living up to one's ideal. This blessing he has now lost and he hates himself for his folly and baseness in losing it. Moreover remorse is a feeling which is only seen at a fairly high plane of moral development. In the earlier stages of morality the ideal is too weak and too ill-organized to cause much pain when neglected.

The same sort of feeling as remorse, only much more vague and ineffective, is indicated when we speak of a bad or guilty conscience. There the contrast between the ideal and the real self is present to the mind, but the feeling produced is not an acute one. The phrase implies no resolution of amendment, no bitter self-reproach: nothing but a certain shame and a sense of liability to punishment.

In proportion as the discord between the real self and the ideal brings with it mental turmoil and disgust, so does the harmony bring contentment and peace, the peace of a good conscience which to the habitual sinner passes all understanding.

Usually this blessing is one which, when we enjoy it ourselves, we do not speak about or dwell much upon, there being but a step between self-contentment and spiritual pride. It is when we have gone astray that we are most sensible of the happiness we have lost. While we are still in grace the better attitude is one of aspiration. For unhappily for our peace, but happily for our spiritual health, as our achievement grows, our ideal grows too, and our conscience becomes more exacting. As we think of what we hope to gain, what we possess appears the more imperfect. We see the same thing happening in the intellectual life. Just as Newton said he was in science like a child picking up pebbles on the ocean shore, and the dying artist sighs that art is long and life is short, so the righteous man, after a life of effort and sacrifice, exclaims that he is an unprofitable servant and a sinner.

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IV.—VOLUNTARY ACTION.

By the Editor.

In a paper by Mr Shand on "Attention and the Will," read in the first instance before the Aristotelian Society, and afterwards published in *Mind*[1], it is maintained that what we call a voluntary decision is a unique differentiation of conative thought. Its uniqueness is, according to Mr Shand, analogous to that of visual as compared with tactual or other sensations. His argument is based on an analysis of involuntary action. Sometimes our bodily organs execute an action in opposition to our express volition. From this it follows that mere efficacy in determining bodily movement is no distinctive character of will. If we proceed to look for other characters, we find none that belong exclusively to will, as compared with the counter-impulses which, in certain cases of involuntary action, frustrate volition. Attention, desire, effort are all involved in the voluntary attitude; but they may all belong as well to the antagonistic tendency which renders the voluntary attitude abortive. The theory that an act of will consists in identifying the tendency to a certain line of action with the self, is true in itself, but it is not an ultimate explanation. If we inquire what identification with self means, it turns out that we can define the self only by reference to a presupposed conception of will. There is no other mark by which to distinguish a conation identified with the self from one which is not so identified, except that the first is a volition, and that the second is not. Mr Shand infers that a determination of the will must be an attitude of mind, having a distinctive quality incapable of further analysis or description. Mr Shand's analysis is very acute and methodical; but I am not sure that it is conclusive. In this article I propose to put forward an alternative view which does not appear to me to be open to the objections urged by Mr Shand. I shall begin with a general examination of the

[1] Oct. 1895.

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nature of voluntary choice, and I shall then consider those instances of involuntary action on which Mr Shand lays so much stress.

At the outset, we must exclude as irrelevant all consideration of the actual motor efficacy of various conations. This is a result reached by Mr Shand through analysis of special instances, but it is in reality obvious from the nature of the case. The question as to the nature of a certain mode of consciousness is quite independent of the question whether or not this mode of consciousness will be followed by a certain train of occurrences in the organism and in the environment. If I will to produce an explosion by applying a lighted match to gunpowder, my volition is none the less a volition because in the course of its execution the match goes out or the powder proves to be damp. Similarly, the volition is none the less a volition if it turns out that my muscular apparatus refuses to act, or acts in a way contrary to my intentions. The connexion between certain modes of consciousness and corresponding movements of the limbs adapted to satisfy our desires, is a benevolent dispensation of Providence; but it does not enter into the constitution of the conscious state which precedes the executive series of occurrences. When the conscious state is one of volition, it is indeed necessary that the subject should look forward to the bodily movements either as practically certain, or at least as possible. A belief of this kind is an essential ingredient of the voluntary attitude. But the existence of the belief is in itself sufficient. Its truth or falsehood is a matter of indifference. In a precisely analogous way we must, in determining to produce a gunpowder explosion, assume that the powder is or may be dry enough to take fire. But it is by no means necessary that the gunpowder in point of fact should be dry.

The ground is now cleared for our further advance. We have merely to analyse the facts of consciousness. We have in no way to consider the conditions under which the executive apparatus of muscles joined to tendons etc. is brought into play. The first question which confronts us is: What is the difference between that conation which we call a determination of the will and other conations? We may simplify the problem, to begin with, by excluding all modes of conation which do not include the idea of an end. We may also exclude all longings after the unattainable. But a conation which derives its definite character from the idea of an end as attainable, is a desire. We have, then, only to deal with desires. The question is, how does a desire differ from a volition? The only answer Mr Shand can find is that a desire is a desire, and a volition is a volition.

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The difference between them is, according to him, incapable of analysis in the last resort. I do not agree with this view. I agree indeed that in volition we have an element which is not present in desire. This element appears to me to be assignable and namable. It consists in a certain kind of judgment or belief. A volition is a desire qualified and defined by the judgment that, so far as in us lies, we shall bring about the attainment of the desired end. Mere longing may be defined in the floating idea of an end. Mere desire is defined in this idea together with the problematic judgment that we may or may not attempt to realise it. A volition, on the other hand, is a desire defined in the judgment that we are going to realise an end, if possible. Sometimes the possibility is simply assumed; sometimes it is made an express condition. But where the judgment is explicitly conditional, it always refers to circumstances which are regarded as beyond our control. The limiting condition may be either indeterminate, as when we say that we shall do so and so *Deo volente*. Perhaps some such indeterminate limitation is always present. At any rate, it always ought to be present. There is a story of a man who advertised that his coach would start *D. V.* on Wednesday, and whether or not on Thursday. If we took him at his word, this would be a case of absolute volition. But it was probably only a case of mental confusion. Where attainment is judged impossible, volition in the full sense cannot exist. Desire is then defined by a judgment of the form, "I would if I could." This mental attitude seems to be what is meant by the word *wish* in ordinary language. A man who wishes a thing would will it if he had an opportunity.

I do not of course mean to say that a volition is merely a judgment. My general position is that it is the cognitive side of our nature which gives determinate character to the conative. That conation which finds its cognitive definition in the judgment, "I shall attempt to attain this or that end," is a volition. Introspective analysis exhibits the conative tendency as the reason of the judgment,—as that peculiar kind of reason which we call a *motive*.

We have now to inquire whether this account of will explains its characteristic features. The first point to be considered is the difference between the state of suspense or conflict of motives, and the state of decision or resolution which terminates it. The difference certainly does not lie in any increased intensity of the victorious desire or group of desires. Nor does it lie in any peculiar vivacity acquired by the idea of the end to be attained, or of the action by which it is to be attained. The desire may have been more intensely felt, the

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idea of the action may have been more vivid, while the conflict was still going on. The essential point is, that, with the emergence of volition, the conflict ceases. There is no longer a struggle of motives. There may indeed still remain a struggle of another kind, a struggle against difficulties and obstacles; but these difficulties and obstacles are regarded as external; there is no longer any struggle so far as regards our own part in the matter. This termination of the struggle does not merely mean that one impulse or group of impulses has turned out to be stronger than their opponents. They might conceivably manifest their superior strength without a cessation of conflict. When two unequal and opposite forces are applied to a particle, the particle will move in the direction of the stronger force; but the action of the weaker force still continues to manifest itself in a diminution of velocity. The triumph of the voluntary impulse is not of this kind. In a perfect volition, opposing impulses are not merely held in check; they are driven out of the field. If they continue to exist, they do so as external obstacles to a volition already formed. They are no longer motives; they are on the same footing with any other difficulty in the way of attainment.

Now, on my view, the characteristic difference between the state of indecision and that of decision, is that in the first we do not yet know what we are going to do, and that in the second we do know what we are going to do. Does this explain why impulses, which in the state of indecision appear as motives, in the state of decision either disappear or appear only as obstacles? It is a rule of formal logic that two contradictory propositions cannot be both true. Hence, if we judge that we are going to adopt one line of conduct, we *ipso facto* judge that we are not going to adopt an incompatible line of conduct. The incompatible lines of conduct are thus placed outside the sphere of deliberation. When we know what we are going to do, we can no longer weigh *pros* and *cons*. The die is cast. What were previously motives cease to be motives. The effect of the judgment which constitutes volition on opposing impulses is analogous to that of any other judgment which excludes the possibility of action. We cannot will to do what we believe to be impossible. But if we believe that we are going to adopt one line of conduct, incompatible lines become *pro tanto* impossible. Of course, all depends on the strength of the belief; but this is only saying that the efficiency of a volition in maintaining itself depends on the strength of the volition.

It is clear from this why the psychological strength of a volition, viz. its power to maintain itself, is by no means measured by the residual strength of the desire which forms

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its motive, after the strength of competing desires has been deducted. But we have still to take into account other circumstances which give volition a fixity not explicable by the initial strength of the desire which at the outset formed its motive. The first of these is the influence which an established belief has on the general flow of mental activity. The judgment that we are going to act in such and such a way shapes our thoughts and our other volitions into consistency with itself. Having once decided on reading a paper at the Psychological Congress this year, my thoughts tend to dwell on the subject I am to discuss. I read books connected with it. Again, the fact that I am going to read it at a certain date goes far to regulate the disposal of my time in other respects. I do not go abroad at Easter, but take a holiday in England. I refuse an invitation for the summer, and so on. Thus, the judgment that I am going to Munich becomes a centre round which other judgments group themselves in systematic unity. It thus becomes more and more interwoven with the general body of thought and conation. The more advanced this process is, the greater fixity does my volition acquire. To disturb it is to disturb the whole system of tendencies with which it has become interwoven. In this way I may commit myself to such an extent that it becomes impossible to draw back.

Another circumstance which contributes to the fixity of volition is that it involves identification of a certain line of conduct with the idea of self. This phrase as ordinarily used is rather vague, and Mr Shand has made capital out of its vagueness. But from my point of view it is definite enough. When I judge that in so far as in me lies I shall realise a certain end, the endeavour to realise that end becomes *ipso facto* an integral part of the idea of myself. Failure to realise it is regarded as *my* failure, *my* defeat. Thus volition becomes strengthened in the face of obstacles by all the combative emotions. These are of varying kinds and of varying degrees of strength in different individuals; but whatever tendencies may exist to hold out or struggle against opposition, merely because it *is* opposition, are enlisted in the service of the will, inasmuch as the idea of the line of conduct willed is an integral part of the idea of self.

The phrase *identification with self* may have a deeper significance. It may refer to the nature of the motives of voluntary decision,—to the nature of the desire which is regarded as the reason of the judgment that we are going to act in a given way. This motive may be a comprehensive tendency which controls the whole course of our lives, and the counteracting impulses over which it triumphs may be comparatively special and

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isolated. The tendency which is the ground of volition may be an essential part of the general outline of our mental organisation; whereas counter tendencies may be occasional and temporary impulses. The devoted patriot who rejects a bribe abides by his principles instead of yielding to temptation. In abiding by his principles, he is also said to "maintain his integrity." If he had yielded to temptation, he would have violated the continuity and consistency of his existence as a whole; he would have felt that he had suffered defeat; remorse would have ensued. In accepting the bribe, he would be aware that his mental attitude at the moment was not representative of his general mental attitude. He would only be able to identify the act with the idea of himself for the time being, not with the idea of himself as a whole. The volition of the moment would not be representative of the volition of other moments. He would have before his eyes a coming time of repentance or regret. Now, I do not mean that this would be so in all cases; it sometimes happens that temptation is so overwhelming, or creeps in so insidiously, that the voice of principle does not make itself heard at the moment. But where it does, as it often does, it is clear that the tendency to preserve the unity and continuity of the self forms a very strong influence both in determining volition, and in giving it fixity when once it is formed. The certainty that if our volition is broken and we act in opposition to it we are likely to rue it all our life after, may enable us to turn aside unhesitatingly from what might otherwise be irresistible temptations.

The fixity of will is also strengthened, often in a very high degree, by aversion to the state of irresolution. Suspense is in itself disagreeable; and when we have emerged from it by a voluntary decision, we shrink from lapsing into it once more. Besides this, prolonged and repeated indecision is highly detrimental in the general conduct of life. The man who knows his own mind is far more efficient than the man who is always wavering. Hence in most persons there is a strong tendency to abide by a resolution, just because it is a resolution. This tendency is greatly strengthened by social relations. If we are weak and vacillating, no one will depend upon us; we shall be viewed with a kind of contempt. Mere vanity may go far to give fixity to the will.

I have now assigned what I take to be sufficient reasons why a voluntary determination often has a permanence and a power of maintaining itself, greatly out of proportion to the relative strength of the original conation which forms its motive. No doubt my list of reasons could be extended: but I have probably said enough for present purposes.

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We have now to consider the distinction between voluntary and involuntary action. In the strictest sense of the word, an involuntary action is one which takes place in opposition to a voluntary resolution which exists simultaneously with it and is not displaced by it. Thus, if I determine to make a certain stroke at billiards, and if in the moment of action the muscular apparatus fails me, so as to give rise to an unintended, jerky movement, my action is strictly involuntary. But the most interesting case is where the will is defeated, not by an accidental derangement of the motor process, but by an antagonistic desire. We have a typical example of this in the unsuccessful effort to restrain a reflex movement, over which we have normally a sufficient control.

Suppose a party of soldiers to be climbing a crag in the dark so as to surprise a castle. Noiselessness is a condition of success. A sneeze or a cough probably means defeat and loss of life. Now it is possible to a large extent to restrain the actions of sneezing or coughing; but if the irritation is sufficiently intense and persistent, repression only makes the ultimate outburst more violent. One of the soldiers may be determined not to sneeze, although the impulse is so strong as to give him great uneasiness. The sneeze would be a relief, and the impulse to sneeze is a desire. None the less, if the impulse prove irresistible, the sneeze is involuntary. Now it may be said that in the moment in which the reflex apparatus is escaping or is about to escape from control, the soldier foresees what is going to happen. It may be said that he judges that he is about to sneeze, and that therefore the sneeze ought, on my view of the matter, to be regarded as voluntary. Here, however, there is a very important distinction to be made. A voluntary act is one which takes place in consequence of the judgment that, so far as in us lies, we shall perform it. The converse is not true. The act is not voluntary when the judgment that the action is going to take place arises because the action is already otherwise determined. In the present instance, the knowledge that the reflex impulse is triumphing, or is about to triumph, is not the condition which causes it to triumph. The sneeze is merely an external circumstance, on the same plane with other external circumstances of an unfavorable kind, such as the inconvenient watchfulness of a sentinel, or any other accident which might defeat the attempt to surprise the fortress. We have assumed that the sneeze is in fact contrary to volition; but we may go further. In such a case it is impossible to suppose that the soldier could will the sneeze. His life and his main interests in life depend on the success of the attempt. There is here an identification of the

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end in view with the idea of the self, which is not merely a consequence of volition, but is of such a nature that it must inevitably determine volition. On the one hand, we have an isolated and momentary reflex impulse; on the other, the man's very existence and career is at stake. If we deduct from the man's mental organisation all the interests which prompt him not to sneeze, and all the interests interwoven with these, we have taken away from him his self as a whole, including even the possibility of gratifying future impulses to sneeze. On the other hand, if we suppose the chance irritation of the mucous membrane to be absent, it makes scarcely the slightest difference to the man's personality as a whole. A self can hardly consist in a sneeze.

There is also another case which is peculiarly apt to give the impression of a weaker motive triumphing over a stronger, because of an arbitrary interference on the part of the Ego. It may happen that we are initially merely introspective onlookers at a conflict taking place in our own mind, and that we then intervene to strengthen one of the opposing tendencies. Thus I may feel a craving for exercise, which prompts me to take a walk. This craving is opposed by still stronger tendencies arising from habit and indolence, which prompt me to sit still and read. These two opposing sets of motives may at the outset have the field to themselves. But I may proceed to reflect on the value of the opposing tendencies. I then recognise one of them as healthy and advantageous, and the other as unhealthy and disadvantageous. I accordingly resolve to do what in me lies to strengthen and develop the motive which from this higher standpoint I prefer. For attaining this end various means are at my disposal in various cases. I may call to my mind reminiscences of past pleasant experiences of muscular exercise; or I may determine straightway to take a walk in the belief that the taste for exercise will grow with use. By these or other means I shall probably succeed sooner or later in so nursing and fostering a weak tendency as to make it capable of triumphing through its own strength. But of course the will to reinforce it is itself determined by motives which are stronger than opposing motives.

Let us now turn to an example given by Mr Shand. "A man may have a morbid craving for drink or opium; and the ideas which move to its satisfaction may at last become irresistible[1]." Now there are here three cases to be considered. In the first place, the morbid craving may be the motive of a genuine volition, and the action may therefore be voluntary at

[1] *Mind*, October, 1895, p. 454.

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the time at which it takes place. None the less, it may be maintained that, in a sense, the action is involuntary. When this is so, a comparison is made between the totality of interests defeated by indulging in the drink or opium, and the morbid craving itself considered as a relatively isolated impulse. If the craving were taken away, the self would still be left. If, on the other hand, all the interests which are opposed to the indulgence were taken away, there would be little but the morbid craving itself. The craving is indeed more than the craving to sneeze; but it has the same fragmentary and isolated nature, when compared with the total being of the man, especially when the man is a Coleridge. Thus the denial that the act is voluntary may have a good meaning: it may mean that the volition of the moment is discordant with the general volition of a life-time, so that the intervals between periods of indulgence are embittered by remorse. It is felt that the morbid craving, by its isolated intensity, prevents full deliberation. There are, it is assumed, in the man's nature a vast system of conative tendencies, which, if they had found fair-play, and developed themselves in consciousness, would have determined volition, even if they did not determine action. In the second place, the action may take effect before a voluntary decision has been arrived at. In the midst of the conflict of motives, one of the opposing impulses may steal a march on the others, and determine action before the process of deliberation has worked itself out to a definite conclusion. We may act before we know what we are going to do. A man, while still mentally hesitating whether he is to drink a glass of spirits or not, may find that the morbid impulse has so vivified the idea of drinking, that he is swallowing the spirits before he has determined whether to do so or not. The act is then involuntary because it is contrary to the volition to suspend action until he has made up his mind. It is by hypothesis not dependent on the judgment, "I am going to drink." It may also be involuntary in a deeper sense. It may be that from the constitution of the man's whole nature, he would certainly have willed otherwise, if full deliberation had been possible before action. In the third place, indulgence in the drink or opium may be contrary to the man's express volition at the moment. In this case it is analogous to the involuntary sneeze which we have already discussed.

The question at issue between determinists and their opponents is, strictly speaking, not capable of final decision on psychological grounds. The only clear and definite form in which the problem can be stated is this: Does volition always follow the strongest present motives? The determinist assumes

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that the motive which determines volition has *ipso facto* proved itself to be the strongest. The critic of determinism regards this assumption as a *petitio principii*. He demands some criterion of strength independent of the actual result in any given case. The challenge is a fair one; but it is very easy for the determinist in answering it to entrap himself. He may say that strength consists in intensity of impulse or vividness of ideas, or simply in motor efficacy, however this may arise. It is then easy for the partisan of contingent freedom to point out that the will is often opposed to impulses which are the strongest in the sense defined. In considering the whole question, it is important to draw a distinction between the formation of voluntary decision as the issue of a conflict of motives, and the persistence of the decision when once it is formed, in face of opposing tendencies. The first question, then, is whether in making up our minds to act or to refrain from acting, we always follow the strongest motive. The strength of the motive is to be defined independently of the actual outcome of deliberation. Now it is clear that the conation which taken by itself is most intense, or which at the moment can pass into execution with most facility, sometimes fails to determine the will. The cases of involuntary action which we have just discussed are conclusive on this point; but the strength of a motive may depend on other conditions. It may depend on the systematic organisation of the mind as a whole in its conative aspect. On the one hand we may have a highly generalised and comprehensive tendency which pervades our whole lives and habitually controls our special volitions. On the other we may have an isolated and momentary impulse, such as the tendency to sneeze. The tendency to sneeze may have more intensity in consciousness, and it may have readier access to the motor apparatus: but it is not therefore the strongest motive in determining volition. Its motor efficiency may be so great that it produces muscular action in opposition to will; but its relative isolation within the organised unity of the self may make it quite incapable of becoming the ground of the voluntary judgment, "I shall act in this or that way so far as in me lies." Another highly important point is that tendencies determining volition or largely contributing to determine it, may not be explicitly presented to consciousness as motives. Their presence may not be discriminated, or, if it is discriminated, their power may be undervalued; although, in fact, they give to the ostensible motive its main force. Thus a man may suppose he is acting from patriotism, when he is in reality actuated in a high degree by party spirit. Subsequent reflexion and

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self-criticism may reveal the motive which was masked at the time of action. But apart from this reflective analysis, it will not appear as a determinant of volition; in that case, it is indeed part of the meaning of the word "I" in the judgment "I choose," or "I decide," but it is not explicitly presented as the reason of the choice or decision. It becomes a motive, not directly, but indirectly, inasmuch as it is the secret source from which the explicit motive derives its strength. Now if we make full allowance for these masked motives, and also for the strength which a motive may derive from its connexion with the total mental organisation, it will, I think, be very difficult for the advocate of contingent freedom to show that, in forming a resolution, we do not always follow the strongest motives. The best instances which he can bring forward are those in which conflicting tendencies appear to be very evenly balanced, so that the supervening voluntary decision looks like an arbitrary interference of the self, putting a closure on the process of deliberation, and bringing matters to an issue by its own independent action. So far as his argument here depends on the contrast between the fixity of a voluntary decision when once formed and the vacillating struggle of motives before it is formed, he has, I think, been already answered in this paper. If, on the other hand, the contention is that opposing tendencies are sometimes so evenly balanced that the final issue cannot depend on their relative strength, there does not seem to be any way of conclusively proving or disproving his position by special argument in special cases. We must, of course, take into account the possible presence of masked motives. We must also lay great stress on aversion to the state of irresolution, as such. It may be that though we are at a loss to decide between two courses of action, we are none the less fully determined not to remain inactive. Inaction may be obviously worse than either of the alternative lines of conduct. We may then choose one of them much in the same way as we take a cigar out of a box, when it is no matter which we select. Again, many of these cases of apparently arbitrary decision are due to the reflexion that one of the groups of opposing impulses owes its strength largely to temporary conditions,—to a passing mood, or to the circumstances of the moment,—and that if we yield to them we shall regret it afterwards.

We have already by implication dealt with the case of a conflict between a preformed volition and an impulse which interferes with its execution. Sometimes the impulse upsets the volition; but in many instances the fact that the volition is a volition, and not a mere desire gives it a power and per-

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manence disproportioned to the strength of its original motive. A man may have made up his mind to commit a murder, or to make a confession of his shortcomings before a public audience. It may be that he would never have made up his mind to act in such a way in the actual presence of his innocent victim or of the unsympathetic public; none the less his resolution may maintain itself at the sticking point, and be followed by corresponding action, although it could not have come into being at the actual crisis of its execution. If I have explained why the fixity of will should be out of proportion to the relative strength of the corresponding desire, I have cut the ground from under the feet of those who make a case for contingent freedom by referring to hard cases of volition. In all "hard cases of volition," says James, we feel "as if the line taken when the rarer and more ideal motives prevail, were the line of greater resistance, and as if the line of coarser motivation were the more previous and easy one, even at the very moment when we refuse to follow it[1]." In general, the superior force of the tendencies opposed to volition consist in their isolated intensity, or in their readier access to the motor apparatus. But in any case, the strength referred to is the strength of desire or impulse, as such, and not the peculiar strength which belongs to volition because it is volition.

Professor Sidgwick has said that "against the formidable array of cumulative evidence offered for Determinism there is but one opposing argument of real force; the immediate affirmation of consciousness in the moment of deliberate action. And certainly, in the case of actions in which I have a distinct consciousness of choosing between alternatives of conduct, one of which I conceive as right or reasonable, I find it impossible not to think that I can now choose to do what I so conceive, however strong may be my inclination to act unreasonably, and however uniformly I may have yielded to such inclinations in the past[2]." Sidgwick does not himself definitely accept this as a valid argument. He refuses to discuss it because he thinks the psychological issue is irrelevant to his purpose. Our interest being purely psychological, we cannot adopt this course. We have to inquire how this consciousness of freedom arises, and what support it lends to the argument in favour of contingent freedom. At the outset we must notice that it is not confined to the case contemplated by Professor Sidgwick. Wherever there is full and prolonged deliberation, the subject is up to the time when the decision is formed, under the impression that it is possible for him to choose either of two

[1] *Principles of Psychology*, Vol. II. p. 548.
[2] *The Methods of Ethics*, pp. 55–56.

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alternative courses of action. The reason is I think plain. Before he has decided, he does not know what he is going to do. This is what his indecision means. He must therefore regard all the alternative ends which he has in mind as possible objects of volition. But this obviously constitutes no argument for contingent freedom. We might as well argue that the fall of a penny is not causally determined, because when we throw it we do not know whether head or tail will turn up. There is however a further complication when one of the courses of action is judged to be reasonable and opposing courses unreasonable. We here not merely regard it as possible that the reasonable course may or may not be chosen; we also affirm that it is what we ought to choose. And this, I take it, means that it is what we would choose, if the grounds for it were fully brought home to us, instead of being arrested in their development by the impulse of the moment, or by desires which, if not momentary, are at least comparatively isolated in the total organisation of the self. When we say that we ought to choose a certain course, we mean, I think, that it would be chosen by an ideal self. The contrast between the ideal self and the actual self is in the first place a contrast between the self as a systematic unity and relatively detached tendencies. In the second place, it is a contrast between an undeveloped and a developed self. The development intended is the development of the self as a whole in the direction at once of more perfect unity and of greater differentiation. The developed self would recognise itself as the goal to which the undeveloped self was on the whole tending. Thus when we say we ought to pursue a certain course, we mean that we should actually decide on pursuing it if we were more completely what we already are. We mean therefore that there is in us a possibility of so deciding.

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V.—CONSCIOUSNESS AND BIOLOGICAL EVOLUTION. (I.)

By Henry Rutgers Marshall.

Sec. 1. The increasing interest shown in these days by biologists concerning the psychological problems that bear relation to their studies of living matter, is certainly a reason for congratulation. Psychologists have for long years been turning their attention to biological studies and have in later times given especial consideration to neurological investigations: and they have done this with the hope that by the study of the morphology and development of the nervous system they might learn what would be of value to themselves in their investigations in relation to the nature of consciousness, which we all know to be intimately connected with neural functioning. Moreover no psychologist in these days will hesitate to acknowledge his indebtedness to the physical sciences, and especially to physiology and neurology. But it must surely be agreed that the psychologist is warranted in expecting the workers in biological and physiological fields to ask help in return from the science to which he devotes his energies: for it is not at all unlikely that light may be thrown upon some of those biological problems which are before us to-day by a study of the character and development of the conscious states which have relation to the forms and evolution of life.

In the course of the series of articles of which this is the first number I shall discuss a number of biological questions in connection with which the teachings of psychology appear to me to be likely to be of service. In this first number I shall touch upon a few such points, concerning which it will be well to have a clear understanding with my reader before I develope the argument of the succeeding articles.

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I.

Sec. 2. I wish in the first place to make a brief study of the theory of "parallelism" between mental and physical phenomena as it seems to me to be valid, and to ask the reader to consider the bearing of this theory upon the notion that consciousness has functional significance in biological development.

Before entering upon this discussion I would beg my reader to note one point with reference to two opposed theories of the relation of mind to matter which are displaced by this theory of parallelism.

Long before the human mind had gained any knowledge of the existence of a nervous system, the forms of consciousness,—sensations, intellect, emotions, and will,—were thought of by men as acting upon and making use of the bodily organs. The mind was thought to influence the body.

Later investigation has shown that the farther we study, the more evidence do we gain that all conscious effects involve neural changes; but it has also shown, on the other hand, that there are many neural changes which do not appear to affect consciousness at all.

It is not unnatural that the old notions of the use of the body by the mind should have clung to us, and that we should find a school of thinkers who interpret the newly discovered facts in terms of the hypothesis that mind influences the body, and who are unwilling to renounce the claim that human consciousness is fuller and wider than neural reaction. In fact such theorists are able to support their position by pointing to the vast fields of conscious activity that cannot be positively shown to be determined by any known neural activity; and they are thus led to hold that investigation has shown no more than the fact that special mental states are in themselves efficient to produce nervous action; and to claim therefore that these mental states are the all important matter for consideration in discussing the relation between neural and psychic action.

My reader will say truly that no body of serious and learned psychologists in our days holds such an extreme view, but he will agree that this is practically the position taken by many unlearned in psychology who earnestly attack all opposed views as dangerous materialism.

I refer to this view however principally because I wish to note that equally unwarranted appears the position of an opposite school which includes amongst its numbers not a few of our eminent scientists, who are wont to look upon those who cling to that theory of ancient pedigree, of which we have just

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spoken, as gullible fools. Those who hold the opposed theory of which I now speak are wont to call attention to the fact that action of nerve is explicable in very much the same terms in which we describe the mechanical forces of nature which surround us: and emphasizing the fact that a great deal of nervous action does not appreciably affect consciousness at all, they are wont to contend that therefore this action of nerve must be all important for our consideration in discussing the relation between mental and neural actions; and they ask us to look upon the accompanying conscious states as merely "epiphenomena," affecting the mechanical nervous action no more than the squeak of the cart wheel affects the progress of the cart; if we may borrow a descriptive phrase from Prof. Huxley.

But why, we are at once tempted to ask, is the claim of the extremists of one school better than that of the extremists of the other; when of these two sets of facts which we know to bear a very close relation to one another, each set in turn is held to be alone of significance? And this is the point which in introducing this discussion I wish to make clear; viz., that if the view first mentioned assumes too much in proclaiming the all importance of the conscious aspect in relation to neural change; equally may it be held that the opposing view assumes too much in proclaiming the all importance of the neural changes and the total unimportance of the coincidents in consciousness. If one view be rejected because of its dogmatism, then the other view must be rejected for exactly the same reason.

A more logical hypothesis than either of those above spoken of has presented itself to the minds of many of our best thinkers in these days, in what is known as the theory of "parallelism" of which I have already spoken. This hypothesis differs in detail as expressed by various writers; my own expression of it will probably differ in some respects from that of any of those who have written upon the subject: in order that my meaning in what follows may be clear I shall run the risk of wearying my reader by stating the theory as it seems to me to be valid, in its broad lines.

Sec. 3. It seems to me that if, in reference to the problem before us, we treat logically the phenomena of psychic life as we experience it we are compelled to hold that each and all of the elementary activities of life have psychic correspondents; or in other words that they are accompanied by some form of what we may call "mentality"; but that under certain conditions, and only under these conditions, does this mentality

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take the form that we speak of as consciousness. Why I think we are led to this position I shall explain briefly.

In the first place we have become convinced, as we have already seen, as the result of physiological investigation that while consciousness is always attended by material changes in our organism, yet only some of these material changes appreciably affect that consciousness. Still we are unable to bring ourselves to believe that the connection between material change and consciousness is fortuitous, and of no moment.

But our attention is called at this juncture to the fact that the highest organization of life which is found in the cortex of the brain, is known to influence most markedly the most complex forms of consciousness, and the great body of neurologists will agree that the fact that the most effective mass of what we call consciousness is connected with the action of that elaborated part of our nervous system which we call the brain, shows that neural systematization is of fundamental importance in relation to consciousness, which we may look upon as due to coincident psychic systematization.

But if it be granted that neural systematization is thus of importance, then we are led in the first place to grant, as is generally done, that there are grades of consciousness in animals of different forms and types corresponding to grades of this neural systematization in them. Nor can we stop here: for we are surely forced to allow also that there are within our very selves various systems of consciousness corresponding to varieties of neural systematization within us. This is evidenced by the more or less morbid conditions known as states of "double consciousness," and by the normal shiftings of mental capacity.

We are thus led to go a step farther and to hold that as there are many neural systems within us of varying grades of complexity and integration, all of which have means of expression of more or less definiteness; that therefore there is a great probability that these lower neural systems are the coincidents of certain lower grades of consciousness.

The facts as we have discovered them are then explicable if we hold that activity in one of these psychic systems, viz., that which is coincident with the pulse of activity in the brain, is of preeminent importance; and that in man this importance is greatly increased because our brain system has connected with it the power of giving itself the elaborately differentiated, and yet relatively definite and fixed, expression in speech.

Furthermore we must hold that this preeminent system of consciousness is itself, within certain limits, capable of becoming split up into more or less separate parts, which at times may

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find their expression correspondingly separated. We are forced to this conclusion by the facts above noted of what are acknowledged to be multiple consciousnesses within the same person, such as we note in cases of hypnotic or other trance states, and in morbidly neurotic patients, and, if we will but look for it, in our own perfectly normal lives.

Furthermore we may surmise that, under certain conditions, the minor systems of activity, which are normally entirely separated from the preeminent system, may join with and affect the constitution of this preeminent system,—this brain consciousness,—that alone has its mode of expression in speech.

The preeminent consciousness, this "brain consciousness," in man is indeed all that falls within the scope of introspective psychology, but logical considerations surely lead to a widening of the limits of consciousness in the manner suggested and to the hypothesis that there is a psychic somewhat, a certain "mentality," connected with each neural action which gives us consciousness of varied grades, under certain conditions of neural systematization.

If this conception be correct then it seems probable that the "mentality" coincident with certain of our bodily actions may fail to become part of the preeminent consciousness, either because it has not gained the qualities which make consciousness out of mere "mentality," or because actual disconnection determines the absence of the mental correspondents of these activities from forming part of the preeminent consciousness. And this disconnection may be due to incommensurability of rhythm, if we may so speak, between the several sets of activities, an example of which we have in the insensibility of the soldier to the painful sensations caused by a wound, during the excessive excitements of mortal combat: or it may be due to actual disconnection between the physical parts that are active, such disconnection as we see almost completely realized in the independent action of the cerebro-spinal and sympathetic nervous systems, the latter serving to govern the functioning of the assimilative and other systems which do not need to react quickly to alterations of environmental condition.

But even where the connection of the physical elements in a physical system is complete we should expect to find certain marked distinctions within the psychic system coincident therewith. We must conceive of the physical action of the coordinated system, of which the brain forms the centre, as a pulse, as it were, of many correlated subordinate activities, most of which are unemphatic, but some of which are likely to stand out from the mass. Similarly on the psychic side we should expect to find at each moment a pulse of consciousness

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correspondent with this pulse of physical action, this full consciousness being made up of many subordinate elements, most of which will be unemphatic and which will appear to form an unanalysable whole, but some of which on the other hand will be emphatic, and will therefore stand out as increments, so to speak, to this unanalysable whole.

This unanalysable whole is I think that which we designate as the empirical Ego, with which the psychologist has to deal; and the emphatic elements, which appear as increments to this Ego, are the elements which fall within the so-called field of attention; such elements for instance as make up our recognized sensations, emotions, thoughts and acts of volition.

It must be noted also that at times we include in this field of attention certain effects from systems of mentality that are ordinarily separated from the system that we call here our "speech consciousness," our "brain consciousness."

I would here call attention to the fact that this statement of parallelism avoids the difficulties inherent in those atomistic theories so carefully considered by Prof. James in his criticism of the "Mind Stuff" theory[1]: for it assumes in a system no mental elements which act separately within the system; nor any quasi mechanical or chemical combination of such mental elements to produce new psychic phenomena. On the other hand it assumes that each more or less complex psychic system acts as a whole, its elements being variously emphasized and thus changing the quality of the whole psychic pulse: but so long as these elements remain part of a system in no sense are they conceived to act as elements as they would act if they were not part of the system.

I think it will appear in the sequel that the conception of the relation of mental to physical activities thus stated aids us materially in gaining a correct view of not a few matters which are of interest to both biologist and psychologist; and before passing on I shall ask the reader to consider with me, two ever recurrent problems upon which this hypothesis, if it be correct, appears to throw no little light.

Sec. 4. In the first place I wish to speak of the bearing this doctrine of parallelism has upon the question whether consciousness has or has not a function in relation to biological development.

Puzzled by the enormous complexity of animal life, failing in their endeavours to comprehend the basis of the manifold accommodations to varied conditions which are seen in living

[1] *Principles of Psychology*, Vol. I. Ch. VI.

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beings of all grades, balked in their efforts to conceive the origin of variations from typical forms; many eminent biologists have turned to consciousness for aid.

Some lay hold of the notion that consciousness appears in the universe as the source of variation, is the active agent in changing the course of typical neural action in order to produce accommodation[1]. Impressed by the difficulty of squaring this view with the generally accepted hypothesis of the conservation of energy, others lean to the notion that if consciousness cannot change the value of a neural force it at least may serve to guide such a force into new channels, and thus produce variation.

But the effort to explain these biological difficulties by recourse to the hypothesis of interference by consciousness must appear to my reader to be futile, if he once consider how little relatively we know of the nature of consciousness, how little of the nature of neural action; and how exceedingly difficult it is to conceive of the manner in which this supposititious active or directive interference can be made effective. The hypothesis of such interference is in truth a mere statement of our ignorance.

But if we think of consciousness in the light of the hypothesis of parallelism as above stated, it seems to me that the question before us is laid at rest.

We then see that the complication of animal life is coordinate with a like complication of psychic life. We see that the manifold accommodations by the living elements are coincident with equally manifold new relations of psychic elements. We see that variation from typical biological forms involves necessarily variation from typical psychological forms. We see furthermore that growth in organization in neural fields must correspond with growth in organization in mental fields.

It appears then that if we are satisfied, for the time being at least, to accept the fact of physical evolution in all its complexity, and are content as we must be at this moment to study its forms and progress with acknowledgment of the difficulties surrounding the question of its origin, and of our ignorance of its teleological significance so far as the universe is concerned; then we may be satisfied in a similar manner to accept the fact of psychical evolution in all of its complexity; may properly content ourselves as scientific psychologists with the study of mental forms and of the development of mental phenomena.

[1] Such a view was expressed by Prof. Cope in an address at Philadelphia, Dec. 1895, before the Amer. Psychological Association.

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But beyond this we may hold that there is no reason to believe that consciousness, properly speaking, has or can have any function in relation to biologic evolution, rather does it appear as a correspondent of this biologic evolution. And on the obverse side we are led to hold that there is no reason to believe that biologic forces have or can have any function in relation to mental development: what we do hold is this; that the great forces which move in the universe bring about this mental development coincidently with the evolution of complex neural systematization.

The question as to the nature of the moving forces which have produced the genesis and continuance of this evolution, coordinately physical and mental, intensely interesting as it is, we may turn over with some relief to metaphysics, as a question with which biologists and psychologists, so long as they remain in their own fields, have, strictly speaking, nothing whatever to do; although we may surely hope that metaphysicians will some day make the solution of this problem clearer to us.

Sec. 5. The second problem which I would ask my reader to consider here is the view which we are led to hold in reference to the relation of intelligence to instinct, if we maintain the doctrine of parallelism.

If all the instincts observed in the animal world were diverse from our own, as diverse for instance as those which lead to flight in birds, I very much doubt whether we should ever have conceived of the relation of consciousness to instinct action as it presents itself to us to-day.

But noting, as we do, many actions in animals which seem to be clearly automatic, we find in ourselves very similar activities which appear to influence our consciousness; and then again we find others of the same type that do not appreciably affect consciousness at all.

Looking at the matter carefully, and considering the actions in ourselves which correspond to what we speak of as instinct actions in animals, we find that the appreciable effect of these actions upon consciousness can be represented in gradation from a minimum of zero, to a maximum in which instinct appears to have disappeared entirely, giving place to actions produced by will.

On the other hand our attention is attracted to the fact that in our own experience we are able to trace the formation of what we may call pseud-instincts. Actions which were performed years ago only under stress of will and with effort, we know to have come gradually to require less and less of effort; we know we learned gradually later on to perform them

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altogether without attention, although they were still under control of our will; we realize that we have then gradually lost this control altogether; and finally that the actions take place with as little appreciable effect upon consciousness as appears in connection with the most characteristic of the instinct actions.

These observations have led some to hold the theory that all instincts have originally appeared as adaptations that have been intelligent; but that as adaptation has become unnecessary in connection with these activities intelligence has lapsed; and this notion has served to emphasize the above discussed hypothesis, that consciousness has a function in connection with biological adaptation.

But with our conception of parallelism before us it does not seem at all certain that such a theory is warranted. It is of course true that a large mass of our individual habits arise in connection with intelligence, and that as they gain their distinctive characteristics, intelligence in connection with them lapses: and it is equally true that if these habits help to give us success in life's struggle the race which is descended from us may by chance be able to gain these habits of action in form so thoroughly organized that they may appear finally as clear examples of instinct; and this is true whether traits acquired by an individual are transmitted by inheritance, or are not so transmitted.

But on the other hand it is not difficult to understand the lapse of intelligence referred to without recourse to the hypothesis of a functional relation, if our doctrine of parallelism be true. For we have merely to hold that as habit becomes more fixed, neural action becomes more thoroughly organized; and that correspondingly the psychic elements coincident with the neural activities become less and less emphatic in the pulse of the preeminent consciousness with which introspection acquaints us: and finally that these psychic elements either become absorbed into that unanalysable background which makes up our empirical Ego; or else perchance lose all influence upon this preeminent consciousness, and this either through practical physical disconnection of their neural coincidents from the brain, or by their lack of rhythmic relation with the brain activities.

But beyond this I see no reason why we should assume that instinctive actions could not be acquired without any consciousness at all. All that we have to assume in order to account for such acquisition is the occurrence of a "chance" favourable variation in some form of action which in itself may be quite inappreciable in its effect upon consciousness. If this favourable

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variation should happen to become fixed in our race we should have an instinct of new type formed in our descendants without any intervention of consciousness at all.

II.

Sec. 6. I shall now ask my reader to consider with me a question of terminology which appears to me to be of moment in itself, and which will have its application in the articles which are to follow this. I wish to say a few words concerning the nature of Instinct and concerning the application of the term.

As far as we can go back in the history of organized life we find two fundamental influences at work, the influence which tends to restrict variation within certain typical lines, and the influence which would lead the organism to break free from these restrictions.

If we begin by considering a hypothetically simple living mass, assuming nothing more than the existence of the very simplest possible forms of living matter capable of growth, and placed in an environment that furnishes the nourishment upon the assimilation of which this growth depends: if such a mass can be assumed to exist, then I think it will be agreed that we must assume also a tendency to "fission" in the living mass, or in other words must postulate the breaking up of the living mass as it grows: for the reason, as Spencer has taught us, that volume tends to outrun surface; and as the nutrition is absorbed on the surface, while the reactive changes occur throughout the living mass, it is impossible for growth to continue unless the mass breaks up.

That such fission or cleavage does take place in low grades of living matter is well recognized by all those who use the microscope. But if we once assume that this fission or cleavage takes place, it is evident that the new masses will, after the fission, at first be placed contiguous to one another and as the process of division continues that they will, unless disturbed, tend to form a group which we may call an aggregate. Furthermore if the process continue indefinitely it seems to me to be apparent that, unless forces in the environment sweep the newly formed elements apart, we shall soon have an aggregate in which some of the living elements are prevented from absorbing nourishment by the mere fact that they are entirely surrounded by their fellow elements, and cut off from contact with the environment which contains this nourishment.

It would clearly be of advantage to these simple living forms if this difficulty could be overcome, and the simplest effective variation in this respect would be found if the new

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elements, as they were formed, developed a tendency to separate themselves from the parent mass. As a matter of fact in very low forms of life we find what the biologist calls "cilia"; minute, and more or less active, prolongations of the cell substance which must tend to bring about separation between the cells. The microscope indeed shows us still more simple forms, so low in the scale of life that we often scarcely know whether to call them animal or vegetable, which have this power of separating themselves from their fellows, through the agency of no discoverable cilia, but through processes which we fail entirely to comprehend.

But we must not stop to consider these low forms of life too closely, fascinating as such study might be, for our interest in them here is merely in relation to their survival after they have come into existence through the division of the parent mass. What is of interest to us here is the recognition of the fact that in quite another way the newborn elements, tending to aggregate as we have seen they do, may accommodate themselves to their environment without the acquisition of mutually repulsive capacities. For this accommodation may be accomplished by the acquisition of certain differentiations in functioning so that the elements upon the surface of the aggregate and those that are shielded directly from contact with the nutritive environment will tend to react differently; provided that these differentiations result in a transfer of the nutriment from the environment to those elements that are placed distant from this surface.

If we assume even such simple aggregates as above described to exist, then we may suppose that any change in any one element of such an aggregate will tend to bring about some alteration in the elements adjacent to it, and on the other hand that these latter will react to modify the action in the first changed element; thus the action in the element first affected will not be the same as would have resulted had it not been contiguous to the other elements.

If then a disturbance of any kind whatever from the environment reach one of the outer elements of such an aggregate, this element would tend *primarily* to react upon the disturbing force from the environment as though it were an isolated element; and *secondarily* this action would be modified, or inhibited more or less fully by the influence of the other elements of the aggregate. Thus we see that in the very beginnings of the life of aggregation, we have two influences at work: *first, the elemental variant influence* which would lead any element to act for itself alone; to become accommodated more or less perfectly to a stimulus from without itself: and *second, the modifying influence from the aggregate*

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of which it is an element. This influence from the whole aggregate upon a single element is in my opinion the very basis of what in complex organic life we know as instinct. Of this point I shall have a good deal to say in the sequel, but just here I would call attention to two facts. First, that as soon as we rise from mere aggregates to forms that are organized, the actions due to influences inherent in the organism are themselves organized. Secondly, that this organization is developed to the attainment of some biological end; for it is not easy to understand why nature should allow elements to aggregate unless they were aided in the struggle for existence by the fact that the organized actions occurring in this aggregate are of advantage to the aggregate directly, and indirectly to the elements. As a matter of fact this seems like stating a truism, for we recognize the biological end in connection with most of these coordinated actions which we call instinct actions, and I think we must hold that all series of actions which are thus determined by the constitution of the organism and which appear to subserve definite biological ends must be classed together as Instincts.

It is thus that I am accustomed to employ the word Instinct: but the reader will recall that I thus use the word with a wider significance than many authoritative writers attach to it; and at this point it will be well I think to explain and to defend my position in this regard. I think I shall be able to approach the subject best by referring to Prof. Lloyd Morgan's criticism of my usage of this word. He holds, in objection to my extension of the term, that biologists "have grown accustomed to the application of the term instinct to the manifestation of particular activities," and he says "the term 'instinctive' should in my judgment be applied to those activities which are congenital and which are also relatively definite."

To the limitation of the term to congenital activities I am sure all will agree, if we accept Prof. Morgan's usage of the word congenital. For, as he explains, he intends by the application of the term merely to exclude acquisition during life, through experience, which is an important distinction; and he allows a subsidiary classification of instincts into connate and deferred, *i.e.*, those instincts that are perfectly formed at birth, and those which only appear some time after birth.

If we turn then to the question of the definiteness of the reaction, we note at once that while Prof. Morgan lays stress upon this fixedness of reaction in instincts he is nevertheless compelled to acknowledge, as he does in the use of the phrase "*relatively* definite," that this "fixedness" is variable: it seems

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to me that this variableness is so wide, that definiteness of reaction cannot for a moment be used as a differentia in relation to instinct, and that any such usage as Prof. Morgan upholds narrows our conception of the bounds of instinct in a manner to be deplored.

It appears then that instinct actions as *objectively* viewed by the biologist are determined first by their organization, but especially by some biological end which this organization subserves. When we consider them *subjectively* we add the differentia that they are automatic, *i.e.*, that the organized actions take place without our will; and whether we recognize the end to be subserved or whether we do not, and in most cases we do not.

If this be true then the definiteness, and the fixity, of the actions is of secondary moment: that which is important being the character of the biological end towards which these organized activities tend.

This is made the more clear, I think, if we study the instincts with the object of noting how variable are the actions involved in their expression.

It is true that we usually take as examples of the typical instincts those which express themselves in what seem to us to be practically invariable actions occurring in definitely co-ordinated relation to one another, so that the actions appear to be always the same, and to be aroused always by the same stimuli. As an instance of such an instinct we may take Prof. Morgan's happy example of the instinctive reactions in the chick in connection with drinking. Here as his experiments show there is no tendency to look for water; the thirsty little birds apparently have no conception of the basis of their discomfort; they will walk through water without any effort to drink unless they happen to perform the very definite act of pecking at the water, when at once the instinctive explosion takes place, they perform the seemingly definite actions resulting in the throwing up of their heads, and they drink.

But if we study this very case with care we see at once that of the chicks in a brood no two are likely to strike the water with the bill under conditions which will produce exactly the same relations of stimulation, and therefore with each of the chicks the coordination of complex actions which result in the drinking must be different, although in ways that are with difficulty observable.

It appears then that the fixity of reaction is an ideal to which instinct actions indeed tend, but which we may assume is seldom if ever quite reached; and which when reached give us what we usually speak of as reflex actions.

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But if the instinct actions themselves are only relatively definite, the biological end to be attained is much more fixed; and this fact in connection with organization is in my view the *objective* mark of an instinct, to which as I say above must be added, on the *subjective* side, absence of any influence produced by conception of this end.

It seems to me that there are many of the lower types of instinct which show very clearly that their efficiency depends not upon any set of actions which can be spoken of as even relatively definite, but rather upon the trend of the activities they induce, even if the circumstances of stimulation vary; or even if the stimuli themselves, and consequently the reactions to the stimuli, differ to a certain degree. The young chick after being taught to peck may I think without question be held to show an instinctive tendency to search for food, but it expresses this instinct by turning this way and that, by jumping back or rushing forward, by grasping much that it cannot digest in the effort to gain what will serve as nourishment; the general end being reached, as the reader will perceive, through rather widely varying coordinations of actions.

And when we turn to a study of instincts of slightly more complex form our point is much more clearly seen. The actions connected with preparation for self-defence, those connected with protection of the young, with nest building, with migration, etc., these actions are surely to be classed as instinctive; and yet they are exceedingly variable and unpredictable in detail; all that we can predict is the general trend of the varying actions which result from varying stimuli under varying conditions; and which function to some determinate biological end.

Clearer still does this become when we study the higher instincts, those for instance which relate to the foundation of the family in the human animal; instincts which act indirectly through many efforts tending to the accumulation of food or property by the man, and to protective care of the young by the woman. But if definiteness or relative fixedness of the activities involved be the mark of an instinct, as those who object to my usage would hold, then these actions that we have just mentioned cannot be called instinctive. Yet who will agree to such a position; who will abandon the application of the term to the activities connected with fatherhood and motherhood; who will object to speaking of the paternal and the maternal instincts?

But the point that I especially wish to note is this; that if I am right in the contention thus made, then there are series

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of activities of a most complex nature which we must also speak of as instinctive; namely, those series of actions that, through many complications, and without influence from any recognition of the biological ends they subserve, lead to the protection of the weak; to the prevention of tyranny and violence, through oppositions to murder, theft, lying, adultery; to the strengthening of social bonds; and to the emphasis of social consolidation. We are thus brought to see that we are warranted in speaking of the ethical instincts, of the patriotic instincts, of the benevolent instincts, and of the artistic instincts.

Prof. Morgan has suggested[1] that it would be proper to use the term "impulse" rather than "instinct" in description of these less definite and more complex activities which I hold to have all the essential characteristics of instinct actions.

But I think I may rightly protest against such usage: for "instinct" as I use it in this connection is surely employed (as I think it should always be employed) as an objective term, to describe certain series of activities which occur in organisms as we note their life actions; and the word "impulse" cannot, I think, be properly applied in Psychology with such objective significance.

For "impulse" should in my opinion always have subjective significance in Psychology: it is the word we use to describe those more or less painful states of consciousness which are determined by the presence in mind of persistent images of the realization of distinctly motor activities which are not in fact realized[2]. "Impulses" I believe to be mental phases which in an objective view we always find to be determined by the inhibition[3] of instinct actions that have been stimulated by the presence of the conditions that might normally call them out, but which instinct actions, for one reason or another, are not at once realized.

But whether or not this be accepted as true, it will be granted I think that the word "impulse" is widely employed in Psychology to describe psychic phenomena pure and simple, and that it has gained this significance through long usage in the study of introspective Psychology, and in the allied philo-

[1] *Nature*, 18, A. pl. 95.

[2] Cf. my *Pain, Pleasure, and Aesthetics*, p. 273 ff.

[3] This inhibition may be caused by positive opposition, or by the fact that the "stimulus must generate a certain amount of organic instability before the organic mechanism will fall to the response," a condition to which Prof. Morgan refers in an address delivered in Boston in 1895, with part of which he has kindly furnished me a manuscript copy.

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sophical studies; notably in Ethics, where it is constantly used with subjective reference.

It is true indeed that students of physics and of psychology have been accustomed to use the word "impulse" objectively to describe distinctly physical processes; one billiard ball is said to impart its impulse to another ball; the neurologist speaks of the "impulse" from the terminal nerve organ reaching the cortex of the brain.

But as this usage of objective science exists, it is especially to be desired that the greatest care should be used to discriminate between the subjective and objective use when we employ the term in a science in which the subjective significance is usual and proper, and important. It is, I am confident, because Prof. Morgan has not freed himself from his habit of speech as a physiologist, that in writing upon psychology he occasionally lapses into the objective use of the term; as for instance where he suggests[1] that "we apply the word impulse to the tendency of the organism to pass from the relative instability of a need or want, to the relative stability of a satisfaction." This *tendency* is surely an objective fact: but if we consider the matter subjectively, unless introspection deceives me, we are warranted in saying that we experience in this connection two mental states only: 1st the "instinct feelings," which are coincidents of the "instinct actions," which latter are the objective evidences of this "tendency"; and 2nd what Prof. Morgan, using rather popular language, calls the relative instability of a need or want in connection with these possible "instinct actions"; and this last state of mind I think is what writers in Philosophy, in Psychology, in Ethics and Sociology call "impulse."

III.

Sec. 7. I shall now ask the reader to consider for a moment one other point which is not without interest in itself and which will be found most important in relation to the arguments to follow this.

We are all familiar with the conception, brought into prominence by Mr Spencer, that social aggregations may be of organic nature similar to that which we note in the case of individual organisms: the organism in the case of social existence being however of a higher order; one in which the individuals are elements, even as in the individual itself the special organs or the cells are elements.

[1] Boston address referred to in previous note.

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Mr Spencer calls attention to the fact that social aggregates correspond with organic forms in general, 1st, in that they grow, 2nd, in that they increase in structure as they grow, 3rd, in that the individuals which are supposed to be elements of these higher social organisms perform different functions, 4th, in that the so-called life of the social aggregate may be destroyed without destruction of the life of the units, and 5th, in that the units may die or be lost to the aggregate and be replaced by similarly functioning units, without necessary impairment of the integrity of the social aggregate itself.

1. It is clearly true that societies grow: but it is to be noted that they grow for the most part as do the very low forms of individual organic life, by the aggregation of like elements in which the mass of the functioning is the same for all: individual is added to individual in making up the social body, much as cell is added to cell in the formation of the lower organic aggregates, and of the elementary parts of the higher organic forms. In the organic life of the higher animals on the other hand growth is accomplished by the aggregation of parts which function very differently and which cannot, beyond certain limits, be made to function alike, as we shall see more fully below. Intestines, stomach, heart, lungs, liver, kidneys, each differs in form and functions. The form and functioning of individuals of social aggregates are clearly much less differentiated.

2. That social aggregates like organic aggregates increase in structure as they grow must be granted, but the increase corresponds with that found in the lower animal life, rather than in that of the higher grades, as is more fully explained in the next paragraph.

3. That differentiation of functioning is marked in social bodies is of course agreed, and it is clear that the complex division of labour which appears so prominently in the higher civilizations corresponds more or less accurately to the differential functioning of parts in the individual organism.

But here we must note that these differences of functioning of the individual elements of social aggregates are determined to a great extent by conditions external to the individual, just as in the lowest forms of individual life the cell elements are determined to differential functioning by differences in the stimuli which reach them from without; their varied performance being due not to inherent differences in the parts themselves but almost altogether to differentiation of these external stimuli.

The same influence of external circumstance is visible in the social aggregates even where they are of the highest type.

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A man for example may be a common farmer under certain conditions, but given other conditions may find himself leading armies to victory: in other words, the elemental individual who under certain stimuli may be part of the apparatus which brings nourishment to the social body, under certain other stimuli may become part of the protective apparatus.

But in the higher organic individual life such transfer of function takes place with great difficulty, and where it is possible at all it occurs only within narrow limits. One kidney may indeed learn to do a large part of the work of two: the foot may learn to do some of the work of the hand; some part of the brain cortex even may learn to do the work of a part that has become extirpated by disease or by surgical operation, but the change must take place slowly, and the accommodation is recognizedly difficult, even where the functioning of the two parts involved is closely allied, as in the cases just mentioned: where the functioning is very diverse, as between heart and lungs, brain and stomach, transfer of function is known to be impossible.

In the very highest of the social aggregates such as we find in our most fixed civilizations there is, as already indicated, no corresponding difficulty in the transfer of function from individual element to individual element.

4. That social aggregates may be destroyed without death to the individuals of the aggregate is true, and the same is true of the cell units or simpler cell parts of the lower animals.

But as animals rise in the scale of organization the life of the parts becomes more and more necessarily dependent upon life in the whole organism. The heart of the frog will indeed beat on one's hand for a considerable time after it is removed from the body, but it cannot live long apart from the body even if it be artificially nourished: certain of the functions which are determined by the action of the spinal nervous system will be carried on also in the frog after its brain has been extirpated: but this cannot continue for any great length of time. And in man, and the higher animals in general, death of the organism involves much more speedy death of the elementary parts.

In the social aggregate on the other hand what is assumed to be death of the aggregate or destruction by disruption may occur without the production of any visible effect upon the duration of life in the individual elements of the aggregate. A tribe of troublesome savages may be broken up, as often happens, but this involves no death of individuals. In the higher social life, Poland and its social organization has disappeared without loss to the world of those who would but for

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its disruption make a nation to-day. So you may disrupt mere cell aggregates without destroying cell life: you may cut certain of the lower animal forms in twain and you will speedily find that you have destroyed neither part, but that presently you have two smaller individuals.

5. It is true that in the lower animals, parts which have been lost may be replaced, the loss not producing death in the organism; if we cut off the claw of the lobster it is after no long time replaced and the animal is apparently unharmed: it is true also that in social aggregates, social forms may continue, although individual elements die; their work being taken up by other individuals.

But in the higher animals destruction of any important part involves speedy death in the organism as a whole; and in this respect there is no correspondence between the life of the higher animals and what is claimed to be the life of the social aggregate.

It becomes evident then from each of the points made above that if the social body be organic it can not be much more advanced in integration than those lower forms of individual organisms which in the beginning of this sketch we described as little more than aggregations.

Sec. 8. When all is considered it appears to me that we must come to the conclusion that we cannot lightly cast aside the notion that social life is organic in its nature; it seems on the whole most probable that some of the complex developments in our fully differentiated life may have relation to efficiency in a wide social organism; an organism however of very low type.

The fact that this hypothetical organism if it exist must be of low type is a point to which I shall refer with a special application in a later article of this series: I have treated it at length here from the biological point of view because I wish to point out an implication on the psychological side which seems to be appropriate in this place.

If it be true that the social organism so far as it exists at all must be supposed to correspond with the lower forms of animal life in which the complexes of cells are little more than aggregated; rather than with those forms which are so closely integrated that they may be spoken of as truly organic: then it is surely improper to speak of the opinions of aggregates of men, as we comprehend them, as a "social consciousness," as our extreme sociologists oftentimes do[1]. For the conception of

[1] Confer the late French sociologists who speaks of imitation as social memory.

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a social consciousness implies that the thoughts of men as they are related to the whole pulse of the social consciousness, must correspond, in the main, with particular psychic elements in us, as these are related to the whole pulse of our own conscious life.

Were the psychic elements which make the substance of our conscious life so loosely bound together, so fortuitously unrelated, as are the thoughts of men, we could certainly not believe that out of these more or less isolated psychic elements anything could arise correspondent to consciousness as we know it. Only where we perceive close community of impulse, and identity of thought, amongst large masses of men can we imagine any social consciousness to exist, and then only of a grade much lower than human consciousness as we know it.

Furthermore, even if we suppose, for argument's sake, that a social consciousness does exist, of which our thoughts are mere elements, and the possibility of such existence I agree to, what reason I would ask have we to believe that our elemental thought can in any way grasp the content of this hypothetical social consciousness? As well might we expect the elements of our psychic life, say our sensations, to grasp the complex resultant which we call our consciousness. He would be a bold psychologist who would suggest that a sensation could appreciate our higher life of reflection.

If there be perchance, correspondent to our individual consciousness, a social consciousness of sufficiently high grade, it may know our thoughts as elements much as we appreciate the existence of our own sensations and their elementary qualities, and it may have means of expression that are effective for other consciousness of its own order; but we as elements of this wider consciousness can surely not be able to grasp even dimly the nature of the higher consciousness which, if it exist, must be determined by the pulse of thought of many interrelated individual consciousnesses. What sociologists are often tempted to speak of as the "social consciousness" should therefore properly be spoken of merely as the related consciousnesses of the individuals composing social groups.

One more point. If it be true that social aggregates are organic and that this organic nature is of a low order, then it is clearly impossible that the hypothetical social body can be able to perform functions correspondent to those which in individual life are performed only in organic forms of a most complex order.

The hypothetical social body, if it exist, may be counted on to perform the differential actions that relate to the lower forms of assimilative life, and those which relate to simple forms of

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self-protection. But just as soon as we assume that this hypothetical social organism can perform great complex work correspondent to the higher grades of effort in an individual with all his parts thoroughly integrated, we must expect to find our assumption unverified: we must expect the social functioning thus attempted to fail, because the aggregate in such direction fails to act as an integrated unit, because it loses its organic structure and becomes a mere cumbersome machine with parts working together in time indeed, but under no coordinated and integrated system. This is a thought which it seems to me our thoroughgoing socialists may well take into serious consideration in these times.

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VI.—DISCUSSIONS.

THE NATURE OF "SUBJECTIVE" KNOWLEDGE.

It seems desirable to draw attention to some obscurities in the notions of Introspection and Self-consciousness as currently employed, and to the difficulties in the way of making these notions clear and distinct: more especially as we find in psychological text-books that very little attempt is made to define them with precision. It appears that this vagueness arises mainly from our imperfect understanding of the fundamental and psychologically vital process of *self-observation*.

Let us first briefly consider the bearing of the question on the generally accepted division of "three fundamental and irreducible mental functions," intellection (which we shall here freely speak of as consisting of presentational or of cognitive states), conation, and feeling (pleasure-pain): having in view especially this analysis as it is formulated by Dr James Ward. How is it arrived at? The whole of self-observation—and this holds equally of self-consciousness—is an intellective process, a mode of knowledge: it belongs to the presentational side of consciousness. Whatever 'more' than knowledge there is in mind, this 'more' must *as known* consist in presentations. The supra-presentational constituent of consciousness is in the ordinary text-books supposed to be distinguished and characterised psychologically by the method of introspective analysis: but how can we speak of analysis in mind, or of introspection, save as directed upon a given *content—e.g.* a complex of presentations? This suggests that whatever we are able to distinguish by analysis in consciousness must be either itself a presentational content or a mere *quale* of the latter; the very nature of 'introspection,' self-observation or self-knowledge, as ordinarily conceived, seems to point directly to such a conclusion. Hence the attractiveness of the *quale* theory of Feeling, which Mr H. R. Marshall has expounded and defended in his work on *Pain, Pleasure, and Aesthetics*: no reader of this able work can fail to feel the force of its general contention,—whatever he may think of the special arguments by which the author supports it. We may state the difficulty in another way when we consider not the supposed nature

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of the introspective process as such, but the functions themselves, other than presentational contents, which are known by it. If there is in consciousness an 'other' or a 'more' than knowledge—to borrow one of Mr Bradley's phrases—then it seems impossible that we could ever come to know it, just because it *is* more, *i.e.* is not cognitive; if it were cognitive, it would fall back to the level of presentation.

It may be worth while to give a symbolic illustration. Let us denote the cognitive elements in mind by $f(a, b, c)$, and the elements of feeling and conation—which for our present purpose need not be distinguished—by $a\beta\gamma$. Then all cognition belongs to $f(a, b, c)$: but consciousness consists of $f(a, b, c) + a\beta\gamma$: now $a\beta\gamma$ is not cognitive of itself or of anything else,—how then can cognition of it enter into $f(a, b, c)$? But suppose $a\beta\gamma$ is cognitive: by hypothesis it cannot be merely so,—it must be more: call it, then, $f(a', b', c') + a'\beta'\gamma'$, where $a'\beta'\gamma'$ represents the 'more'; how then can cognition of the latter constituent enter into the former? There is thus no evading the difficulty by retreat, in this way; it follows us, shadow-like, for ever. I need hardly say that the sign of addition, as here used, does not imply that feeling is conceived as a mere mechanical or external addition to the material of intellection; we must recognise that in actual conscious life the affective, active, and intellective are inseparably combined at any given time. But we must also recognise that the affective and active functions are wholly distinguishable, in our reflexion, from the intellective; and if they are, they cannot be cognitive. Intellection is not cognitive without them,—we have no reason to suppose that intellection would be possible without them; but this does not remove the difficulty. Before dealing directly with this problem, it is necessary to guard against a serious misunderstanding to which, as experience has shown, our position is exposed. In insisting on the almost generic distinction between the selective or feeling-directed activity and intellection as constituents of consciousness, and on the fact that all knowledge of the former belongs to the intellective side as such, we certainly do not imply that the feeling-directed activity is only known indirectly through its presentational accompaniments,—that we only know *about* it by its effects on the course of presentations. From such a view common sense instinctively recoils: it would readily adopt Mr Marshall's position in preference to such an extravagant paradox, and would insist that we are 'immediately conscious of' feeling and will; and its recoil seems thoroughly justified. For how could we even conceive or think about feeling or will without some basis of immediate experience to account for the conception? In Mr Marshall's words, "How are we able to bring the matter of pleasure and pain under intellectual analysis at all, if they are grasped by us in a manner so entirely apart from knowing?" (*op. cit.* p. 40). If our knowledge were only indirect, inferential, or mediate, how could we possibly know *what* functions to assume in order to

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account for the subjectively-initiated changes in the presentational field? How could we postulate a feeling-initiated activity to *explain* the selective differentiation which is essential to the development of intellection, unless the postulated function were an actual explicit constituent factor of the Light of Consciousness itself? If we had not some kind of direct immediate hold upon the selective activity of mind, it is impossible to understand how we could know it even indirectly or mediately[1].

The unreflective spontaneous view, to which I have referred, is no solution of the problem, but is itself the question to be interpreted. The judgment of common-sense, that we are immediately conscious of feeling and will, only states the problem over again, as is usual in all such cases. However it serves to bring out the two sides of the fact that we seek to explain, though it is not able to reconcile them. It is unquestionable that feeling and activity are *known about* (we cannot get rid of the preposition, with its implication of relation or *reference*): this knowledge belongs entirely to the presentational side, and, as Dr Ward has it, "however far extended, it advances only by discernment of new relations." Again, it is unquestionable that feeling and activity are facts in consciousness, as we have seen; in this sense we may say that we immediately experience or go through or *live* a life of feeling and activity in relation to the presentational content,—that its relation to this content is a matter of experience. These two conditions, inseparable in the actual concrete mental state, together constitute what is called 'consciousness of' feeling or will. It will now be evident that our problem is simply that of the real nature of the so-called 'introspective' process of self-observation; and this as we shall see is not to be separated from the question of the real nature of self-consciousness as a mode of cognition. We can now return to the two lines of argument indicated above, where the difficulty of explaining our cognition of such 'subjective' modes of self as feeling and will was set forth. The second of these is probably a main source of the influence of that recent tendency in Psychology to which Dr Ward and Professor Seth have given the name of "Presentationism." The argument is really based on the curious philosophical prejudice or superstition, that in order to know a thing it is necessary to *be* that thing,—a doctrine whose effects can be traced far and wide through the whole history of Philosophy. It amounts to this—any constituent of consciousness, to be known, must itself be a cognitive fact: we must identify the knowing with the known in order that the latter may be known. But is it not of the essence of thought or knowledge to point beyond itself, to be representative or symbolic of something whose existence

[1] Similarly it follows that if the existence of the Self, Subject, or Ego is *only* a matter of inference, its character is left quite problematical: it may be the Spinozistic *unica substantia*, the Leibnitian *Monad*, the Herbartian *Real* or the Hegelian *Weltgeist*.

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transcends it—something that exists above and beyond the existence of the knowledge itself? What is symbolised or referred to or known is not to be identified with the process of reference, the knowledge itself; this view—the obvious truth of which must be apparent to every unprejudiced thinker—has been illustrated and defended at some length in *Mind* by Professor Seth (N.S. No. 9)[1]. Knowledge is essentially a process of reference: and all knowledge is *direct* in this sense, that it refers directly to the object, the reality known,—and not indirectly through some substitute intervening between this and the knower. When a man reflects on his own states or when he reflects on something in the objective world, his attitude to the object is the same; the reference is equally direct, though the knowledge is necessarily incomplete and may in many of its details be illusory.

The bearing of these considerations on the question before us is surely evident: and would probably have long been recognised were it not for another set of prejudices, which seem to arise from the misleading implications of certain traditional modes of describing knowledge. This brings us to the consideration of the first argument referred to above—*i.e.* that introspection is essentially inner *perception*, a direct inspection of the objective contents of consciousness. This idea is an inevitable result of the traditional modes of expression with regard to knowledge. The traditional account recognises that cognition is always essentially a relation or reference: this is most true and important,—but a favourite way of describing the relation is calculated to produce much confusion. Knowledge, it is always said, involves a Subject knowing and an Object known: a duality of terms *in this form* is necessarily involved. Then at once the question arises, If this is true, how can the Subject know itself? Dr Ward has expressed the difficulty thus: "If we identify the two, we transcend our empirical conception of knowledge;...if however on the other hand we regard the knowing Subject as distinct from the Object known, we require a second Subject or at least a higher grade of consciousness" (*Mind*, N. S. No. 5, p. 64). This line of thought seems to rest on the supposition that knowledge is analogous to a bond going across from the Subject to the Object, or, to use a less crude metaphor, that it is analogous to a light proceeding from the Subject and shed on the Object; the Subject is like an eye that is itself the source of the light by which it sees, and the knowing is like the seeing. For the Subject to know itself would then be for the eye to turn its light into itself: and it involves an analogous impossibility. If we apply this idea to the relation of consciousness and the objects of consciousness, we reach the view that self-observation is a kind of direct inspection of one's mental furniture: this I suppose is the traditional view in Psychology.

[1] I may perhaps be permitted to refer also to my own summary statements in *Mind*, No. 12.

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Dr Ward, in his valuable discussion of our present question, from which I have already quoted, seems inclined to accept the above statements as expressing adequately the real problem of subjective self-knowledge: and he proceeds to deal with the problem, keeping this statement always in view. I cannot but think, however, that it is a wholly misleading statement, and that the difficulty is largely one of our own making.

I venture to think that this problem will remain a hopeless one unless we recognise the thorough-going *correspondence* between the relations in which 'subjective' and 'objective' knowledge respectively consist. To say that for knowledge there must be a Subject of knowledge means simply that thought or knowledge exists only as the thought of a thinker: as Professor Seth has said, "knowledge (knowing) is always an activity, an activo-passive experience of an individual Subject." To say that for knowledge there must be an object of knowledge means that knowledge is essentially a reference beyond its factual sphere as one mode of the activity of an individual mind[1]. This reference is in two directions: the one outwards, by which the mind conceives of the Universe as a whole, with its innumerable multiplicity of dependent individual beings: the other inwards, by which it conceives of itself as an individual centre not only of these intellectual functions, but also of affective and active functions which are more and other than the intellectual, however closely they are bound up with these. And just because they are more, the knowledge of them is possible, as involving the necessary transcendent reference of thought. So far from finding self-knowledge inexplicable because the self is more than knowledge, we may say that if the self were all objective knowledge then self-knowledge would be inconceivable: the reflective awareness of that objective knowledge as being *mine* would be inconceivable. It is necessary to bear in mind that the correspondence which we have observed to hold between the two directions of knowledge must not be exaggerated into a complete parallelism: for knowledge is an activity *of the self* whom it makes self-conscious when it is subjectively directed; hence the modes of the self, to which self-consciousness refers, include modes of knowledge, as well as of feeling and will: and none of these are existentially independent of the process by which they are known, though in every case the known cannot be identified with the process by which it is known. In objective knowledge, on the other hand, the objects known are in existence relatively independent of the knower. From the ontological point of view, there is of course no *ultimately real* independence even in the latter case.

The doctrine that 'all introspection is retrospection' seems to be a clumsy expression of the necessary distinction between the

[1] The notion of an Individual must be cleared of all implications of a self-contained atomic existence. The mind may be rooted in the Infinite —it may even itself be Infinite on one side—but is individual on another, in the sense of having a centre of self-hood of its own.

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knowing and the known, when the object known is a mode of knowledge as such: *i.e.* when we reflectively know that we know or observe somewhat, and when we become discriminatively aware of the features or aspects of the process of knowledge on which we reflect. The reflexion consists in relating it in manifold ways—according to the interest of the time: the most fundamental being the relation to self: it is at least a mode of *my* mental life. The terms 'introspection' and 'retrospection' seem both entirely inappropriate: the one is merely a clumsy attempt to correct the misleading implications of the other: and the introduction of a time-reference in the latter of the terms in question is particularly objectionable, for the nature and limits of the present in consciousness—by which I mean the *real* present, not the fiction of an indivisible moment of no duration—are irrelevant to the question of the kind of relation in which subjective knowledge consists. To try to discover how far our knowledge of our 'present' states of feeling or volition is 'retrospective' is surely a most futile performance, if intended to throw any light on the nature of the process by which we know them as ours. Introspection, I should say, is simply a particular case of self-consciousness: we are self-conscious when we reflect upon certain of our states *as ours*, and this is introspection. In ordinary life the interest of such inquiries lies for the most part in idiosyncracies; the scientific introspection of the psychologist is the *same process*, extended and made as systematic as possible, and directed to the end of discovering not personal peculiarities but characteristics shared by all minds.

It is not only in the characteristic of embodying a transcendent reference that subjective knowledge corresponds to objective; but also in that each is possible only on the basis of a present *fact*, which cannot be described as a mode of knowledge or as referring beyond itself in the cognitive sense; but rather as a mode of pure sentience. It may be shown that the whole process of the growth of objective knowledge points back to the sensuous ἄπειρον which is immediately given in external perception: knowledge begins with the definite articulation of this into intelligible fact. We have seen also that subjective knowledge points back to the same undifferentiated germ which is not itself the knowledge in question, but on the basis of which alone is the knowledge possible. We may conceive such a state as a limit which may be gradually approached. Knowledge may then be symbolised as a curve with two branches, which asymptotically approach one another in the direction of the pole, or rather focus, of undifferentiated sentience: and which in the other direction diverge more and more,—though not necessarily in the manner of the parabola, never to meet again, but rather in order to begin ultimately to *converge*. This they do in so far as the progress of Science and Philosophy may enable us to begin to see that the mind and the objective world are not two opposed kinds of existence but are embraced as modes in a deeper unity.

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Our attempt to examine the notion and the fact of self observation has led us to pass by a distinction which is sometimes put forward as though it possessed great significance: I refer to the contrast of the 'pure' and the 'empirical' self or ego. It is surely most unfortunate that this idea of a 'pure' or 'transcendental' self should have been introduced into Psychology at all: for its mischievous effects are not in the least obviated by the denial that Psychology as a science is in any way concerned with the meaning and validity of such a conception; for this of course is implicitly to assume the validity of the distinction, of 'pure' and 'empirical,' and to exclude from consideration the former of the two antithetic terms. The scientific psychologist may exclaim with emphasis that he is not concerned with the 'spiritual substance' assumed by the 'metaphysician,'—that his business is *only* to investigate the 'phenomena,' the empirical facts of mind: but in the absence of proper explanations he lays himself open to the charge that he sides with the 'metaphysician' in the most baseless assumption of the *separation of the substance or noumenon from its phenomena*. The so-called 'pure' ego, the form of consciousness in general, is a logical abstraction, and is analogous to the abstraction of a motion in general which has no particular direction or velocity; the notion inevitably tends to become that of a purely *formal* existence,—in other words, one that has no necessary connection with the material with which it is supposed to deal and the results which it is supposed to produce. The real Self is that which is known and realised or lived in and through the actual process of conscious life; it is essentially manifested in this its content,—its existence consists in gradually organising itself in certain explicit, definite forms.

But if we reject the conception of a transcendental ego, the conception of an empirical ego must go along with it, for they are only conceived in antithesis to one another. If we must needs retain the latter term, it may be used to signify the actual process of the individual consciousness in the sense which has been indicated: or it may be used to signify the process of *knowledge*, as such, when explicitly referring inwards to self,—when the individual reflects upon his own concrete nature so far as he knows it. In this sense the term seems to be employed by Dr Ward when he speaks of the "empirical ego" as "a complex presentation to consciousness, continuously but at no one moment completely presented." The latter sense of the term, according to which it signifies a mode of knowledge, is preferable to the former: for to speak of what is the only self that exists, the real concrete self, as the "empirical ego" cannot but be misleading: while the knowledge that this self has of itself shares the imperfections of all knowledge, in being a very fragmentary and merely symbolic representation of the reality to which it refers. It may be true that the human self has a finite and an infinite side: in that case self-consciousness is merely finite, only in so far as we have not learnt to know the real constitution of our nature.

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I am far from maintaining that the notion of a transcendental ego is a wholly motiveless abstraction; it is a necessary one for the Theory of Knowledge. Knowledge is only realised through individual thinking minds, hence self-consciousness is its necessary condition—*i.e.* the *real* self-consciousness. But Epistemology necessarily deals with knowledge as such *in abstracto*, without reference to any individual thinker; hence the real unity of an actual self-conscious mind becomes, for the pure Theory of Knowledge, the formal unity of an abstract self. This point has been thoroughly explained by Professor Seth in his *Hegelianism and Personality*, ch. i. A brief discussion such as the present one could not profitably have been encumbered with critico-historical investigations: nevertheless an examination of Kant's ideas on the problem of subjective knowledge, in connexion with the masterly exposition of them given by Dr Edward Caird[1], could not fail to be most suggestive.

S. H. MELLONE.

[1] See Caird's *Critical Philosophy of Kant*, Vol. I. pp. 605 ff.

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VII.—CRITICAL NOTICES.

The Theory of Knowledge: a Contribution to some Problems of Logic and Metaphysics. By L. T. HOBHOUSE, Fellow and Assistant Tutor of Corpus Christi College, Oxford. London: Methuen and Co. 1896. Pp. xx., 627.

THIS is an important work in several respects. It is, so far as I know, the first treatise we have had in English dealing explicitly with Epistemology as such. Hitherto[1] the theory of Knowledge has been treated either as an aspect of Logic, as Prolegomena to Ethics, or as the introduction to a metaphysical construction. Of course, as a matter of fact, the treatises on Logic by such writers as Mr Bradley and Mr Bosanquet, and to a lesser extent those of J. S. Mill and Dr Venn, involve a good deal of discussion of the general theory of knowledge. Mr Bosanquet's "Logic" is even explicitly described as "the Morphology of Knowledge." But Logic is essentially a normative science; and even in the hands of the most speculative writers the emphasis inevitably falls on the regulative principles of knowledge rather than on its general nature. In metaphysical treatises, on the other hand, such as the recent great work by Mr Bradley, the problem of the ultimate nature of reality occupies the foreground; and the discussion of the elements involved in knowledge comes in only by the way. Thus it happens that, except in the form of commentaries on Kant and Lotze and of occasional essays, we have had hardly any serious attempt in English to deal with the conditions of knowledge as such[2]. Mr Hobhouse may thus claim something of the glory of a pioneer; and his work (though perhaps in speculative depth hardly to be placed with those of Mr Bradley and Mr Bosanquet) may be expected to continue to be the *locus classicus* for those who desire a connected account of its subject, at least until the much hoped for treatise of Dr Ward appears.

[1] *I.e.* since the time when it became possible at all to draw a definite distinction between the epistemological and the psychological problems. No doubt the chief writings of Herbert, Locke, Berkeley, Hume, and some others, may be said to be essentially epistemological. But on these writers the distinction between the two sets of problems had hardly dawned.

[2] I suppose such a book as Mr Bosanquet's *Knowledge and Reality* is the nearest approach to such a treatment that we have yet had. But that also is in the form of a commentary.

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Having said so much, however, I ought to add at once that Mr Hobhouse makes no claim to have introduced a new subject to English readers. It will be noticed that he calls his book "a Contribution to some Problems of Logic and Metaphysics"; and throughout the course of his treatment he makes no attempt to separate off the province of Epistemology from these two cognate departments. In this I cannot but think that he shews wisdom. The time is probably hardly yet ripe for a definite demarcation of the departments of philosophic study; and perhaps, when the time is ripe, such a demarcation may not be wanted. But it certainly seems worth while at present to attempt a serious discussion of some of the most fundamental questions relating to the nature and validity of knowledge, unburdened (as far as possible) by the attempt to furnish an explicit formulation of the regulative principles of thought on the one hand, or to decide upon the ultimate nature of reality on the other[1]. Of course in doing this it is hardly possible to eliminate altogether questions relating to the formulation of regulative principles or to the determination of the nature of the Absolute: indeed, it is hardly even possible to keep clear of questions relating to the genesis of knowledge, which belong more properly to the department of Psychology. The distinction between different departments of Philosophy turns perhaps in the end rather on a difference of emphasis—a difference, so to speak, in the point at which the centre of gravity of our problem falls[2]—than on any difference of actual content. "Distinctions between the sciences," as Mr Hobhouse himself says, quoting Bacon, "should be taken for lines and veins rather than for sections and separations." So far, indeed, is Mr Hobhouse from any attempt to draw rigid distinctions between different provinces of speculation that he probably errs, if at all, rather by excessive laxity than by excessive rigour of demarcation. Thus when he remarks (p. 5) that "it is nonsense to speak of a thing being true for psychology but false for metaphysics," he is perhaps somewhat missing the point of the attempts that have been made to separate these sciences. The point is not that what is true for psychology may be false for metaphysics (though, in a sense, even this might be maintained), but rather that what is true for psychology

[1] Mr Bradley has said (*Appearance and Reality*, p. 76) that "there can be really no such science as the theory of cognition"; and the absence of any systematic attempt to construct such a theory seems to be the fundamental weakness of his metaphysical work. Where there is no critical theory there are sure to be plenty of dogmatic presuppositions. Mr Bradley seeks to rid himself of these by an incessant dialectic. But this is apt to be somewhat arbitrary.

[2] Analysis, Genesis, Validity, Reality—these terms seem best to express the fundamental problems of Epistemology, Psychology, Logic, and Metaphysics respectively; and to these may be added Value, the fundamental problem of Ethics. But it becomes more and more evident that no one of these is really intelligible apart from the others. Hence also the attempts sometimes made to determine the logical order of these subjects seem, for the most part, futile.

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may be irrelevant for metaphysics. I mention this, however, only to shew that Mr Hobhouse, in writing a separate treatise on a subject which has been generally mixed up with others, is not influenced by any undue bias towards the drawing of distinctions. Indeed, the idea of continuity is the fundamental one throughout the whole of Mr Hobhouse's work; and sharp distinctions are wholly foreign to his point of view.

There is also another point, besides the relative novelty of the subject, which gives a special interest to Mr Hobhouse's book. It is written in a singularly catholic attitude, with a very remarkable breadth in the appreciation of the work that has been done by the most opposite schools of philosophic thought. In this respect Mr Hobhouse has perhaps learned something from Mr Bosanquet, in whose Logic, as was remarked by Mr Johnson[1], "the philosophical descendants of Hume and of Kant...'meet and join hands': not in virtue of relegating their differences to a more appropriate sphere...but by boldly following out their tenets to a plain issue." May we venture to hope that this is now to be a permanent feature of speculative writings in English? It does certainly seem time that philosophy should cease to run in schools (as on the whole psychology has now ceased), and should enter on "the sure path of science," with recognised aims and methods. At any rate Mr Hobhouse has ably carried on the good tradition of a certain aloofness from the partizan spirit; so ably that it would be by no means easy to determine with which school of philosophy he has most affinity. The influence of Mr Bradley is perhaps more easily traceable than that of anyone else; but this is true of nearly every recent writer on philosophical subjects in this country; and in the case of Mr Hobhouse, as in that of several others, the influence has told quite as much in the direction of rousing antagonism as in that of promoting agreement. On the whole the truth seems to be that, while he owes chiefly to Mr Bradley the direction of his speculative interest, the positive content of his thought has come mainly from other sources. He seems to combine Sensationalism and Idealism, together with a certain flavour of Natural Realism, which mixes rather incongruously with the other two.

More definitely we may perhaps explain Mr Hobhouse's position in the following way. He has been bred in the home of speculative Idealism, and has been brought under the influence both of the constructive criticism of Green and of the negative dialectic of Mr Bradley. The weakness of the former, however, both in its treatment of sensation and in its account of the synthetic activity of thought as a relating process, has become fully apparent to him; while Mr Bradley's brilliant dialectic has seemed to do little more than place a new weapon in the hands of the sceptic. "The net result," as he says[2], "is that in philosophy we tend towards negation.

[1] *Mind*, Old Series, Vol. XIV. p. 127.
[2] Preface, p. VIII.

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We get far enough to be sceptical about the foundations of science, and there we stop. In such a state of things, the sinister interests in the commonwealth of knowledge see their chance. The popular essayist tells us that there is really nothing to speak of that we can know with certainty. One belief is on the whole as untrue as another, and therefore why not keep to that which is recommended to us by authority as best suited to our needs? An elegant scepticism about science takes the place of the elegant scepticism of theology with which our forefathers were familiar." Alarmed, therefore, lest the searching metaphysic of Mr Bradley should lead in the end to nothing better than the elegant dilettantism of Mr Balfour, Mr Hobhouse has apparently been driven to search for the elements of truth to be found in those writers who have kept themselves more in touch with the positive work of the sciences. Thus he discovers that Mill's account of the methods of science, though sorely riddled by Mr Bradley's artillery, and even wounded in the house of its friends by Dr Venn, may still be at least partially rehabilitated. Again, in the work of some recent psychologists—especially Dr Ward and Professor James—he conceives that he has found a means of giving a more satisfactory account of the relationship between sense and thought than can be got from the works of Kant and Green. Armed with these fragments, and with the reserve at need of Professor Fraser's "Faith" and Professor Case's "Realism," Mr Hobhouse feels himself prepared against both the terrors of Mr Bradley and the insipidities of Mr Balfour[1]. And certainly it must be allowed that, with the weapons at his disposal, he has fought a good fight and established a strong position.

His main point may be very briefly explained. The whole fabric of modern Idealism may be said to rest upon Kant; but the strange thing about it is that it seems to rest rather upon the denial than upon the affirmation of Kant's teaching. Without the Critique there is no entrance to it; but with the Critique we cannot stay in it. Especially does this seem to be true of Idealism as taught by Green; for, according to this doctrine, the work of thought consists in the synthesising of a manifold, which manifold afterwards turns out to be as good as non-existent. This manifold is of course derived from the atomic psychology of Hume, and even in the hands of Kant himself it seemed in the end to vanish away. Now Mr Hobhouse's argument is, that, according to the doctrines of modern psychology, there is no such manifold in existence; and, as there is no manifold, there can of course be no synthesis of it. And, since the whole doctrine of modern Idealism rests on the view that our world is constructed for us by a synthetic activity of thought, Idealism seems to be destroyed with the destruction of the manifold of sense[2].

[1] For Mr Balfour's philosophical position Mr Hobhouse seems (p. 618, note, &c.) to have a quite peculiar scorn.

[2] "Just because there is no sensation given without relation, it follows that there is no need to postulate any mental activity to make us aware

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This argument of course is not a new one. The view, which was most clearly brought out by Dr Ward, of the primitive condition of consciousness as being rather an undifferentiated continuity than a manifold of atomic elements, at once suggested a doubt as to the validity of the Kantian method, even if such a doubt had not been already necessitated by the procedure of Kant himself and his modern critics and exponents. Accordingly, this apparent contradiction in modern Idealism has been noticed by several writers. But I do not know of anyone else who has stated it so fully and so clearly. The conclusion to which it leads Mr Hobhouse is that the world of our experience is not to be regarded as a thought-construction, but rather as dependent primarily on a certain form of immediacy, *i.e.* of simple Apprehension, which is not to be regarded as the apprehension of undifferentiated sensations, but rather of formed objects occupying space and time. Such Apprehension constitutes the primitive form of knowledge—the primitive "assertion," as Mr Hobhouse calls it—and judgment is simply a development from this, not something required to give it form.

Now this certainly seems to be a strong argument against Idealism; and it has never been put in a more telling form than by Mr Hobhouse. And indeed, as against a certain kind of Idealism, I am bound to say that it seems to me absolutely conclusive. The view that the world is made for us by the synthesising of a manifold, or constructed by a system of relations, which are relations of nothing to nothing, must surely be finally abandoned[1]. But is it so certain that the abandonment of this leads to the abandonment of Idealism, or to the acceptance of such a position as that suggested by Mr Hobhouse? Even as regards Kant's position it is not certain that the manifold of sense is so important as is sometimes supposed. Even for Kant there is the synthesis effected by the "blind" faculty of Imagination before the work of Thought has properly begun; so that, even for Kant, it is by no means a mere undifferentiated manifold with which Thought has to deal; and the work of Thought is accordingly not simply to *relate*, but rather to *see*. It is not the manifoldness but the blindness of sensation on which Kant insists. The essential point of the Critique is not that Thought combines unrelated sense-

of relations except the capacity to apprehend them" (p. 43). This seems cogent if to apprehend means quite the same as to be aware. But see below.

[1] There is perhaps hardly anyone now who holds quite such a view as this; but in a modified form it is constantly recurring. Thus, (to take only the latest example), I am not at all sure that Mr McTaggart's brilliant *Studies in the Hegelian Dialectic* are not partly vitiated by the view of the essential work of thought as consisting in the synthesising of a given 'manifold.' We seem bound to recognise either that the sense-material is not 'given' at all, or that it is given as something more than a manifold.

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data, but rather that, but for the reconstructive vision of the Understanding, there could never be for us the experience of a systematic world. And this is the essential point also of the Idealism that has followed Kant. Whether we call the original datum a manifold or a continuum, in either case it requires to be reconstructively seen by Thought, in order that it may form for us a connected world. It is somewhat perverse, in view of the later developments of Kant's own doctrine, to hold him down to a literal interpretation of the 'manifold,' which was probably introduced more as an *argumentum ad hominem* against Hume[1] than as a positive contribution to philosophy. Kant's argument is that, even granting that there is a manifold of sense, still it requires to be constructively seen by Thought before it can mean anything for us as thinking beings. Accordingly, what we have now to ask is, whether Mr Hobhouse's view of simple Apprehension or "Assertion" removes this necessity.

Mr Hobhouse's view, as I understand it, is that the primary fact of consciousness is an immediate datum of sense which is at the same time the "assertion" of an objective reality—an assertion which is, as it were, valid in its own right, and subject to no correction or modification in the subsequent development of knowledge. This view of the nature of sensation is supported by reference to the psychological theory of Professor James[2]. Some particular instances may serve to make the meaning clear. The pain of toothache is a sense-datum: so is the immediate apprehension of a red colour. Neither of these need involve any judgment *about* toothache or *about* redness. In themselves they are simply of the nature of immediate apprehension. But this apprehension is at the same time an assertion—the assertion of the presence in consciousness of a determinate form of experience; and this assertion expresses an undeniable fact. We may go on to explain it, but we can never explain it away. It may be a small element in our knowledge of the world, but it is indisputably knowledge; and it is thus made apparent that there can be knowledge, and absolutely certain knowledge, without any constitutive activity of thought.

Now the criticism which I should wish to pass upon this position may perhaps be best stated in the form of a question. What does Mr Hobhouse understand by *Assertion?* When we experience tooth-

[1] The view of Leibnitz, in which Kant was bred, was in many respects more nearly in harmony with modern psychology. It is no doubt true that, in abandoning this position, under the influence of Hume, Kant partly lost sight of the continuity of consciousness on which Leibnitz insisted, and only succeeded in reintroducing it in a rather artificial fashion. In this connection it ought always to be borne in mind also that even Hume himself accepted the doctrine of the atomic nature of sensation as a tradition, and was well aware of some of the difficulties to which it led. See especially Green's Edition, Vol. I., p. 559.

[2] In reality Mr Hobhouse's view on this point has probably more in common with the doctrine of Dr Riehl than with that of anyone else. On the views of the latter the remarks of Professor Adamson may be profitably compared. *Mind*, Old Series, Vol. XIV., pp. 73—74, 79—82.

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ache or the simple sensation of redness, what do we affirm? Of course Mr Hobhouse does not mean to imply that we make the assertion (in the simple fact of sense-experience), 'I have toothache,' or, 'This is red.' He would admit, if I understand him rightly, that even to say 'toothache' or 'red' carries us beyond the simple datum of sense. His point seems to be simply that in the mere fact of sense-experience there is a qualitatively determined content which is apprehended as real. But in what sense is it qualitatively determined? And in what sense is it apprehended as real? The apprehension of toothache is no doubt different from the apprehension of red; and both are actual facts in our experience. In this sense there *is* qualitative determination and there *is* a certain actuality. But is this enough to justify us in saying that there is an Assertion of qualitative determination and of reality? Is difference in consciousness the same thing as consciousness of difference? And is reality in consciousness the same thing as consciousness of reality? I suppose Mr Hobhouse would hardly affirm that these are the same thing; yet, if not, it is difficult to see how the assertion of a qualitatively determined content can be said to be involved in simple sense-apprehension. Of course it is not easy to give any definite account of the kind of consciousness that may be supposed to exist prior to the development of conceptual thought. We can do little more than point to such experiments as those given, for instance, in the chapter on Comparison in Perez's *First Three Years of Childhood*, which seem to shew that there may be marked differences in the content of consciousness before there is any definite comparison and discrimination[1]. I suppose, however, that this much would not be denied by Mr Hobhouse. What I understand him to maintain is merely that there are differences of content in consciousness prior to the development of Thought, and that these differences imply the assertion of certain qualitative determinations. But surely a mere sense-experience as such asserts nothing. It simply emerges. It has no doubt an infinity of assertions implicit in it. There is a very true sense in which all that ever comes before us *in intellectu* may be said to be anticipated *in sensu*. But the same might in a manner be said even of the unconscious. A vegetable draws distinctions and makes selections as well as an animal; but these distinctions can hardly be said to be *asserted* until they are thought. They are there for the plant: they are there and are felt to be there for the animal; but surely it is only for a thinking being that they are *asserted* to be there. It may be said that this is only a verbal criticism. But it seems to be much more than this. If it is only thought that asserts, then the statement of Kant is still true, that the Understanding makes Nature[2], in the sense that it is only for a thinking being that there

[1] Cf. Stout's *Analytic Psychology*, Vol. I., pp. 50—60.

[2] "Reveals nature" might perhaps be a better statement, or "discovers it by reconstructive vision." The essential point is that it is not simply given or mirrored, or even simply pieced together, but formed by intel-

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can exist a discriminated and systematic content, in which appearance and reality are distinguished.

In passing these criticisms on Mr Hobhouse's main position, it may be that I am doing him some grave injustice. I confess it is not clear to me what he means by Assertion in connection with the immediate data of sense[1]. Sometimes it seems to be definitely identified with Judgment—corresponding, I suppose, to Kant's Judgment of Perception. Perhaps Mr Hobhouse means simply that there are certain Judgments which involve nothing more than the assertion of sense-data. But still one would have to ask what the assertion of a sense-datum means. It means, I suppose, more than simply having a sense-datum; but how much more? Does it involve placing a sensation within its appropriate system—referring red, for instance, to the colour-continuum, or toothache to the group of organic pains? If this is what Mr Hobhouse means, his Assertion would seem to be equivalent to what is sometimes known as Assimilation,

lectual insight. In this sense the work of thought is certainly, in Mr Bosanquet's phrase, "transformational."

[1] It may be well to give Mr Hobhouse's own account of the term "Assertion" (p. 19, note). "I may explain that I use it here and elsewhere as a general expression for every act of *knowledge* (whatever its nature or source, whether it be sensation or thought), and for every act of *belief*, whether it be true or untrue. All these acts have a certain character in common, and to express this character we want some single word. I employ the word assertion as more free than any other from special associations from which I wish to be clear." I should take this to mean that Assertion is equivalent to Judgment in the widest sense of the term, were it not that it is said to include sensation. Moreover, Mr Hobhouse has just (pp. 16–18) been distinguishing simple Apprehension from Judgment, which (even in its simplest forms) he rightly regards as going beyond the mere apprehension of the present fact. Again, on p. 35 (note), assertion is identified with simple "awareness." On p. 122, however, he seems to bring it nearer to Judgment. He says there that "the apprehension of a present fact is (on my view) a form of knowledge, but quite distinct from the judgment which describes it, and needing some further intellectual act to render it expressible in the proposition. I have therefore thought it best to use the colourless term assertion for the general expression required, restricting the term judgment to the species of assertions which employ ideas and are directly expressible in a sentence." According to this an Assertion would seem to be a rudimentary kind of Judgment. Again, on p. 153, Assertion seems to be given as the specific mark of Judgment. I cannot but suspect some confusion in all this. On p. 534 it is said, "My headache is non-existent if I am not aware of it," and this awareness is again identified with assertion. Here again what does "awareness" mean? Simple presentation to consciousness? Or definite discrimination of content? The former surely asserts nothing: the latter involves judgment. If Assertion is Judgment, however rudimentary, it is thought. I am disposed to think that Mr Hobhouse has not quite made clear to himself what is involved in Attention or Apperception. There is surely Apprehension without Apperception, but without Apperception there is no Assertion. It is here that the recent discussions of such writers as Mr Stout and Mr Shand may be expected to be of the greatest service to Epistemology. See *Analytic Psychology*, Vol. I., pp. 180, 186, *etc.*

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or at least, to a Judgment simply expressing the fact of Assimilation. Doubtless such a process of Assimilation does take place, and doubtless it is capable of being asserted. But does it not still remain true that the content of consciousness involved in this process cannot be known until it is thought, and that in the process of thinking it the immediate datum of sense is in some degree disintegrated and reconstructed? I suppose no idealist denies that there are immediate data of sense, or that certain processes take place in consciousness with reference to these data prior to the interpretation of them as elements in a thought-content. What idealists urge is merely that it is only as placed in such a thought-content that anything can be known[1], and that, as so placed, it is not what it is as simply given. The raw material is transfigured when it is fitted into the edifice of thought. Mr Hobhouse seems to think that a consistent Idealism would be sense-less; but what Idealism affirms is only that sensation *as such* is not knowledge, or any part of knowledge. We could not know toothache unless we had it; but to have it is not to know it. In order to know it we must cease to be at the point of view of simply having it[2].

To press this point further would obviously carry us beyond the limits of a review; but this much seemed necessary in order to bring out what appears to be the fundamental position and the fundamental weakness of Mr Hobhouse's book. In offering these critical observations, I am far from any desire to minimise the importance of Mr Hobhouse's own criticisms on certain forms of Idealism. I would only urge that he should reconsider the basis of modern Idealism as stated by Kant himself and by such commentators as Mr Caird[3] (the

[1] On pp. 18, 19, Mr Hobhouse seems to maintain that the presentation of a content to a subject is all that is required for knowledge. If so, we should have to invent another term for the presentation of a content which is attended to and discriminated. Perhaps Mr Stout's terms, noetic and anoetic consciousness, are the most convenient to mark the distinction. The important point is that it is only for the noetic consciousness that a world of reality exists.

[2] "In this way it is possible that we may come to know the original experience by the very same process which transforms and modifies it, as we may come to know the composition of water by the very process which destroys its existence as water and leaves instead two separate gases." Stout, *loc. cit.*, p. 61.

[3] The discussions in the *Critical Philosophy of Kant* on Kant's Judgment of Perception seem particularly relevant. See, for instance, Vol. I., p. 385: "We have to guard against the mistake of attributing to sense, or to what we call its object, those characteristics which it can have only for a subject which is not merely sentient. It may be true to say that sense has a content which is merely appearance, *i.e.*, which consists of elements that have not yet been so determined by thought as to yield a consciousness of objects; but it is not true that such a content is determined for us by sense *as* an appearance, or, indeed, as anything whatsoever." It is not, that is to say, determined as an element in that systematic whole which we mean by reality, and is consequently neither known as real nor distinguished from reality as an appearance. Has Mr Hobhouse sufficiently "guarded against

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significance of whose work seems hardly to be adequately appreciated). To such statements the question whether sense is a manifold or a continuum is irrelevant, or rather the recognition of the continuity of consciousness only serves to bring out more clearly the necessity of the reconstructive vision of thought. If sense were a disconnected manifold, it might well remain such: it is because it contains in itself the anticipation of those distinctions which only thought can see, that it requires the activity of thought for its interpretation.

The discussion of this question, to which perhaps we have given an undue prominence, occupies only a small part of Mr Hobhouse's treatise. The remainder, however, though full of instructive material, elaborated with great care, is comparatively plain sailing, if we grant the original presupposition; and it would probably not be profitable in such a criticism as this to attempt to follow him throughout the details of his treatment of knowledge, even if I felt myself more competent than I am for such a detailed examination. The discussion of the nature of Judgment and Inference obviously owes much to the well-known work of Mr Bosanquet; and of this indebtedness ample acknowledgment is made. At every point, however, Mr Hobhouse proves himself to be an acute and independent thinker, with a certain tendency to rehabilitate older forms of statement. I am doubtful whether in these rehabilitations Mr Hobhouse has always shewn himself to be adequately aware of the grounds which have led recent writers to depart from the older forms. For instance, when (p. 99) he opposes Lotze's view of the formation of universals, and reintroduces the doctrine of abstraction, he seems not to have fully appreciated Lotze's point. Lotze's point is that *some* universals (such as colour, life, etc.) are obviously not formed by abstraction (at least as ordinarily understood); and that though some other universals do seem to be formed by leaving out elements of divergence, yet these elements are not left out "without compensation." These universals are universals formed by a synthesis of universals; and the latter series of universals at least are not made by abstraction. Mr Hobhouse is scandalised because the "compensation" suggested by Lotze consists in the substitution of a universal. But Lotze's argument is that the universals at least which are thus substituted are not themselves formed by abstraction. Mr Hobhouse himself asks (p. 109), "What is the identity and what the difference between blue and green?"—a puzzling question for those who think that universals are formed by abstraction, and represent simply a common element in two or more diverse things; but not, I should imagine, quite so puzzling for those who think that the identity may be found in the system of colours and the

this mistake"? He seems to think that sensation contains in itself explicitly (*implicitly* no doubt it does) an assertion of reality. But can there be any knowledge of reality apart from the idea of a system? Does not the real mean for us that which is coherent with the whole? Apart from this, everything that enters into consciousness might equally well be called reality or dream.

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difference in the position within a qualitative scale. Mr Hobhouse's revival of the older doctrine of generalisation seems to me to vitiate a good deal of his discussion of logical principles. His defence of Mill's Inductive Methods against the attacks of Mr Bradley is perhaps more successful: at least he has brought out, with considerable force, the reasonable claims that may still be made for these Methods as elements in the Inductive process. In this connection also his objections to what he calls the "hypothetical" view of Induction (*i.e.*, roughly, the view of Jevons[1]) seem valid; and there appears to be some justification for his complaint of the vagueness of Mr Bosanquet's view of "the system" involved in inductive inquiry, and of the way in which the idea of this system is formed. But Mr Hobhouse apparently admits that, in the end, his doctrine is not substantially different from that of Mr Bosanquet[2]; and I cannot but think that it would have been more profitable, instead of opposing the two theories of Mill and Jevons, to have endeavoured to make their interconnection clearer. It seems obvious that they only represent different aspects of a single process[3]. On the whole, however, I am inclined to think that this more purely logical part of Mr Hobhouse's treatise is the most satisfactory and valuable—though not by any means the most interesting—portion of the whole; but the many detailed points which he raises here would require, for their full appreciation, a more careful consideration than I have been able to give to them, and a longer discussion than would be here in place. What chiefly attracts me in his general treatment of logical doctrine is the way in which he keeps hold of the idea of the continuity of consciousness in all the stages of its development. This is perhaps made easier for Mr Hobhouse by his breaking down of the fundamental opposition between sense and thought. But it would have been equally easy if he had recognised more fully that thought contains the truth of which sense is the anticipation. He requires to be reminded of Leibnitz's *nisi intellectus ipse*. Yet it cannot be denied that "the friends of ideas" have been apt to state their doctrines in such a way as to seem at least to ignore the continuity of consciousness. In acknowledging its kinship with sense, thought has been apt to be somewhat unkind to its poor relation. Mr Hobhouse is to be thanked for having redressed the balance, even if a little at the expense of thought.

It is only in the concluding part of his volume that Mr Hobhouse comes explicitly upon the problem of reality. His treatment of this

[1] I am doubtful whether Mr Hobhouse has sufficiently distinguished between the position of Whewell and that of Jevons. They are not both to be described as 'hypothetical' in the same sense.

[2] Except with reference to generalization. Mr Hobhouse of course thinks that we start with the assertion of particulars. I suppose it is this that prevents him from identifying his view with that of Mr Bosanquet. But even here the difference seems evanescent.

[3] On the other hand, they both appear to have the defect of an undue separation between effect and cause, fact and explanation.

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is of course conditioned by his general view of the elements involved in knowledge, and especially of the primacy of immediate apprehension. He finds reality in the immediate data of consciousness, and does not conceive, like Mr Bradley, that these data require any straightening out in order to be made consistent. In fact, while Mr Bradley tends to argue about the facts of experience that, if real they must be consistent, and since they are inconsistent they must be unreal, Mr Hobhouse turns the tables by arguing (p. 496) that, since they are undeniably real, they must somehow be consistent. It is here that he is brought face to face with Mr Bradley's dialectic. In an earlier part of his book (p. 198) he has expressed the view, referring more particularly to Hegel, that "the dialectical process belongs to the pathology of thought." "What is normal and necessary is the formation of abstractions along with the knowledge that only the whole can be the reality, and that the abstraction is not the whole." In view of the history of human thought this seems somewhat optimistic. If the dialectic is pathological[1], it is surely at least an "infirmity of noble minds." As regards Mr Bradley's dialectic, however, I find myself partly in agreement with Mr Hobhouse. Mr Bradley's dialectic seems to be directed too much against artificially selected abstractions. It is not inevitable enough. We do not quite see why anyone should seek to linger at those inadequate points of view against which Mr Bradley argues; or why, when they are overthrown, we should not be led on constructively to something more satisfactory. I think it is true, for instance, as Mr Hobhouse urges, that the idea of continuity would help us over many of the difficulties which Mr Bradley has raised for us[2]. Also it seems to be the case that Mr Bradley's ideal of self-consistency tends to be an ideal of unity without difference, instead of that of a systematic whole. My only complaint against Mr Hobhouse is that, in rejecting this negative dialectic, he seems to deny at the same time the necessity for any reconstruction of the point of view of ordinary knowledge and of empirical science. I am heartily at one with him in his contention that philosophy should not content itself with overturning the content of experience, but should try also to justify it within its sphere. In some sense all our experience must have reality, as Mr Bradley himself acknowledges. But it has not at least all the same kind of reality. All that we experience must somehow find its

[1] In connection with this, Mr Hobhouse refers to the somewhat unfortunate expression of Mr McTaggart about the "subjectivity" of Hegel's dialectic. But Mr McTaggart certainly did not mean (p. 200) that the dialectic merely "represents the effort of *the individual* towards truth, and is contingent on *his* limitations," unless by the individual we understand the human consciousness as such. See *Studies in the Hegelian Dialectic*, p. 139.

[2] See, for instance, pp. 454-455. In general, it seems to me that Mr Hobhouse's use of the conception of continuity is one of his most fruitful contributions to philosophic thought. He has read Bradley with the eyes of Leibnitz.

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position in the whole; but surely some of it, as it immediately comes to us, is matter in the wrong place. Toothache (to take a previous instance), as a simple sense-experience, is apt to present itself, when it rises to any considerable intensity, as if it were the filling of the universe. It is the world in pain. It fills the field of sense-experience, as the idea of the Universe (or at least of *a* Universe) fills the field of the conceptual consciousness. When we think it, however, it reduces itself to a very small place in a somewhat insignificant being. Perhaps Time, looked at in a sufficiently comprehensive way, might sink to a similar level. To say this is not to say that any element in our experience can ever be simply negated. It can only be *aufgehoben*, and put in its proper place[1].

In conclusion, I may say that Mr Hobhouse's book as a whole is carefully reasoned and full of suggestiveness. He writes with lucidity and force and, in spite of an occasional tendency to flippancy in illustration (which most readers will readily pardon, and some perhaps hail as a relief in an otherwise heavy subject), he has an adequate sense of the importance of the questions which he discusses, and spares no pains in developing his argument. Occasionally, however, I seem to find lapses which one would scarcely expect in so thoughtful a writer. Thus at one point in his (generally luminous) treatment of probability, he remarks (p. 292, note), "that the view to which we might be tempted *a priori*, that sheer doubt is the only reasonable attitude in the absence of rigid demonstration is barred by" a formula which he has just given. "If by use of a probable argument I am right ten times and wrong once, I am far nearer truth than if I remain in doubt all along." It would seem to follow, by parity of reasoning, that the gossip who tells truth nine times out of ten is more veracious than the person who maintains a discreet silence. But perhaps I do not rightly understand what Mr Hobhouse means by "sheer doubt." Again, in dealing with Kant's arguments about infinity, he asks (p. 600, note), "Why, *e.g.*, should it take an infinite time to conceive infinite space? Does a yard take three times as long to conceive as a foot?" If space is to be conceived as constituted by the addition of part to part, it would certainly take an infinite time to go through an infinite number of additions. The treatment of Immediate Inference (pp. 259–260) hardly seems serious[2].

[1] In connection with this, we may notice the remark of Mr Hobhouse (p. 172) that "Socrates does not cease to be wise because he is an Athenian, or because he is 'snub-nosed'." Perhaps not; but in a complete judgment on the character of Socrates the term "wise" would probably not occur. We should find, instead of it, an exact description of the particular kind of wisdom by which Socrates was distinguished. In this account "wise" would certainly be qualified by "Athenian," and perhaps even by "snub-nosed."

[2] Mr Hobhouse appears to regard immediate inference as merely a rhetorical device. He gives *A* is *B* ∴ *B* is *A* as an instance of conversion. Does he suppose "Great is Diana of the Ephesians" to be the logical converse of "Diana of the Ephesians is great"? Of course if he merely

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And, in spite of the extent to which Mr Hobhouse has been influenced by such writers as Mr Bradley and Mr Bosanquet, his references to Idealism seem in general to shew a curious want of appreciation of the real meaning of Idealism as treated by its best exponents. He seems to be haunted by the suspicion that an Idealism of the type of that of Berkeley (and even of Berkeley as somewhat crudely interpreted) is the final goal of transcendentalism. He does not appear to have grasped the fact that the essence of modern Idealism lies in the view that the real must ultimately mean the intelligible, and that nothing is finally intelligible except in the light of intelligence. There may be difficulties enough in the interpretation and development of such a view; but it is surely wide of the mark to suppose that modern Idealism has any interest in reducing reality to states of the individual consciousness. Still, it must no doubt be allowed that, in the utterances of some recent writers, there is a certain justification even for such a misunderstanding as this. At any rate, these are only occasional blemishes. On most points Mr Hobhouse shews thorough knowledge and uncommon penetration, and his book will certainly do much to advance the study both of Logic and of Psychology, as well as to stimulate a fresh inquiry into the fundamental problems of Metaphysics.

I am keenly conscious of the inadequacy of such an account as the foregoing of so large and important a work as that of Mr Hobhouse. There are many points of detail over which a reviewer would naturally wish to linger, both by way of commendation and by way of reproof. There are especially some psychological points (such as the discussion of Memory, the account of the apprehension of Time and Space, etc.), and also some points in connection with the more strictly logical doctrines, as well as in the still more absorbing metaphysical investigations into Substance, Cause, Self, and other subjects of perennial interest, on which it would be tempting to expatiate at length. But it would hardly be possible to do justice to such a book without writing another equally large. Enough has probably been said to make its significance apparent, and to indicate its fundamental position. No future writer on the subjects with which it deals can well afford to neglect it. The best criticism of such a

means to urge that there can be no inference which is immediate in the sense of not involving presuppositions that are not strictly contained in the original judgment, there is much to be said for this. But if the subject was worth treating in a book on the Theory of Knowledge at all, it would have been worth while to make some effort to determine what are the presuppositions that are involved in such cases. I suppose such considerations as those adduced by Dr Keynes with reference to the import of propositions would have been relevant here. In connection with this point, it may be well to notice that Mr Hobhouse seems sometimes to use the term "equivalence" rather loosely. Thus on p. 252 it is stated that "the content of the conclusion of a syllogism is *a part of the whole formed by the two premisses together*"; and this is immediately afterwards said to be "a case of equivalence." This suggests the view of Jevons (*Principles of Science*, chap. IV.), which it is obviously not intended to suggest.

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work is generally the next one: a reviewer can only taste, and report his impressions. One final remark, however, may perhaps be hazarded on the structure of the volume as a whole. It is described as a treatise on some problems of Logic and Metaphysics, and it seems to fall naturally into two parts. The beginning and the end are concerned with knowledge and reality: the middle portion tends to occupy itself rather with certain detailed points of logical theory. Now I am far from denying that much of what is contained in this middle portion is relevant to the main line of argument. But on the whole I cannot but think that some division might profitably have been made, and that Mr Hobhouse might have given us two useful books of moderate compass instead of a single rather unwieldy one—one of the two being a criticism of current logical doctrines, the other a discussion of the fundamental problems of knowledge. The former would perhaps have been the more solid and satisfactory of the two; but the latter is the one that I should most wish to see more fully thought out. But Mr Hobhouse—though already favourably known as the author of another interesting work[1] in a very different department of thought—is still quite a young writer; and no doubt we may expect to see both sides of the subject more fully developed by him in future.

J. S. MACKENZIE.

Essai critique sur l'Hypothèse des Atomes dans la Science contemporaine. Par ARTHUR HANNEQUIN, Chargé d'un cours complémentaire de Philosophie à la Faculté des Lettres de Lyon: Docteur ès Lettres. Paris: G. Masson, 1895. Pp. 419.

To investigate thoroughly the philosophical claims of the Atomic Theory, to sift the evidence on which it rests, and to be critical of its adequacy as a complete Philosophy of Nature, while admitting its partial truth and its utility within the domain of science—to accomplish this would be a task which must earn the gratitude of all students of Philosophy. This task is attempted—and to some extent, at least, it is satisfactorily performed—by the present work. It is divided into two books, which may be described, respectively, as the epistemology and the metaphysics of atomism. Of these two books, the first is by far the best and the most important; the second book, which endeavours to glean the elements of metaphysical truth in atomism by transforming it into monadism, would have the greatest interest if it were successful or novel, but unfortunately it appears to be neither. The present review, therefore, will deal much more fully with the first book than with the second.

The fundamental proposition of the first book is this: That all atomism results from the attempt to apply to continua the discrete

[1] *The Labour Movement.*

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conception of number, the atom being the discontinuous element required for numeration. Hence arise at once the necessity and the contradictions of atomism. This thesis is thus stated by M. Hannequin (p. 143): "The atom is found always, at the end of all analyses, as the product of the contest waged by quantity against magnitude, by unity and number against the multiplicity and continuity of space and time—a necessary contest, from which springs science, but a contest without issue, if, as we have endeavoured to prove, it must always result in contradictions." This theorem is the guiding thread of the book, and is ably maintained throughout a detailed criticism of mathematical science.

Starting from the Kantian view, that the mind "knows, in things, only what it discovers of its own substance, and knows fully only what it creates" (p. 4), our author deduces that all science, in proportion as it is rigorous and exact, must be a creation of the mind. Now Arithmetic is the only science—so the argument continues—whose object is wholly the creature of the mind; hence in all phenomena, science seeks to abstract from the sensuous wealth of the concrete data, and deal only with their purely quantitative aspect, *i.e.* their aspect as motions in space and time. But although motions, being pure quantity, can only be dealt with by number, yet, being continuous, they can never be *adequately* dealt with by number. Thus Mechanics springs from the effort to reduce to number an object it has not created, the continuum (p. 10). While affirming the universality of motion, science understands motion only when, by number, it destroys its continuity. Hence the necessary method of the exact sciences, and hence their unavoidable contradictions.

Proceeding to the special sciences, our author divides his criticism into three chapters, on atomism in Geometry, in Mechanics, and in Nature.

Of these three chapters, the most original and the most fundamental, to my mind, is the first, which is concerned with the whole conception of continuous quantity and continuous variables, as expressed, in the Calculus and in Analytical Geometry, by means of number. The infinitesimals here cannot, he insists, be absolute zero; for otherwise their integration could not give a finite sum, and their ratio could not give a determinate differential coefficient. Every time we use the method of infinitesimals, in fact, we postulate elements, which are not zero, but only unassignably small. Thus the method of indivisibles, which Newton and Leibnitz believed themselves to have overcome, remains the basis of all mathematical operations with continua. Not that we *find* elements, in space or in any other continuum, but that we postulate them, as the only way of applying our methods.

This difficulty in the Calculus—that, while professedly dealing with continua, it is applicable only by supposing them discrete—is, I fear, painfully real, and would seem to be denied by mathematicians only because of the familiarity and success of the method. On the

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other hand, the attempts of Cantor to extend the conception of pure number so as to cover continua—which Hannequin, following Kerry[1], subjects to a criticism both sound and conclusive so far as it goes—seem to me, ingenious as they are, to be open to even severer strictures. For Cantor's second class of numbers, by which he hopes to exhaust continua, begins with the first number larger than any of the first class; but as the first class (the ordinary natural numbers) has no upper limit, it is hard to see how the second class is ever to begin. Cantor's attempts, indeed, seem to have proved, more conclusively than ever, that no legitimate extension of number can suffice for the adequate treatment of continua.

This impossibility leads Hannequin to the first fundamental contradiction of atomism, the necessary divisibility of the indivisible element. This is only our old friend, Kant's second antinomy, but it acquires a new force by the proof of its inherence in mathematical method. At the same time, its bearing seems so far purely geometrical, and no reason is shown, at present, why *matter* cannot be regarded as discrete. Space is given as a continuum, and becomes meaningless if we limit its continuity, so that, for Geometry, the antinomy is unanswerable; it would scarcely be relevant to atomism, however, but for the general criticism of the Calculus to which it leads. This criticism applies equally to motion and all other continuous quantities, and has therefore not merely a geometrical, but also a very important mechanical application.

Apart from this more general result of the first chapter, it would have little connection with the real subject of the work. And this Hannequin admits: Geometry alone, he says, would not lead to atomism, if it were not necessarily employed in explaining phenomena (p. 71). But he nevertheless endeavours to prove that pure or descriptive Geometry, which does not aim, directly at any rate, at such an application, has a reference to quantity, and in this, I think, he is mistaken. He finds this reference in the straight line, which, as he truly says (p. 31), is the basis of all metrical properties, the scale on which all geometrical magnitudes are measured. But in spite of this statement, he adopts, as alone correct, the Archimedean definition of the straight line as the shortest distance, and here we have, he says, at the very foundation of pure Geometry, a reference to quantity (p. 30). He does not perceive that the straight line, if it is to serve as the basis of metrical properties, must be defined without reference to these properties, which it alone is to render possible. It must, in fact, be defined by a purely descriptive property, as is ordinarily done when it is regarded as determined by two points. Pure Geometry, when it deals only with projective properties, or even, as in Euclid, with equality deducible by superposition, is independent of the conception of continuous quantity; for if it compares magnitudes at all, it compares, not independently given

[1] *Vierteljahrsschrift für wiss. Phil.* IX. Heft 2.

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magnitudes, but magnitudes so constructed as to be equal or commensurate. It is only when Geometry is applied to the comparison of independently given magnitudes, as in its analytical developments and scientific applications, that the difficulties of continuous quantity become unavoidable.

This, however, is a question of minor importance in a work whose main business is with science, for in all applied Geometry our author's argument holds: wherever the Calculus is used, we have the inevitable contradiction of an indivisible element in a manifold which, *ex hypothesi*, is divisible *ad infinitum*.

In the second chapter, which deals with mass, this conclusion is of great utility, for it proves that mass, wherever ordinary mathematical methods are employed, must be regarded as consisting of discrete atoms. The discussion of motion, however, with which the chapter opens, seems hardly to realize the difficulties of the subject. Motion, like space, says our author, is the object of an intuition, and is in this sense given in experience. Uniform rectangular motion here takes the place occupied, in Geometry, by the straight line; but a motion cannot be directly known as uniform in experience, for we have no method of measuring time apart from motion. We therefore set up such a motion as a type, and seek its image where we may. How to measure actual departures from the type, and thus give a precise import to the laws of motion, our author does not inform us. He endeavours to make the first law self-evident, by remarking that a mobile, whose motion is constant, is in an unchanging state, which requires no cause for its persistence (p. 82). This is a tempting argument to all who wish to prove the first law, but it seems to overlook the fact that a state of motion is a state of change, for which, even where its velocity and direction are constant, a cause might reasonably be demanded. Again, there is no mention of the difficulty that the uniform motion of the first law has to be absolute motion, while any knowable motion is necessarily relative.

Passing from motion to matter, he observes that force and mass can only be determined as to their ratio, for acceleration alone, in Dynamics, is directly measurable, and from this, by the second law, the ratio of force and mass, but their ratio only, can be deduced. Even their ratio—though Hannequin does not mention this—can only be found by the help of the third law; for to compare two different masses, we require the same force, or at least forces with a known ratio, acting on both, and this the second law alone cannot give us.

Force and mass, as Hannequin insists, are inseparable correlatives; nevertheless, he endeavours to connect mass with volume (p. 90), on the ground that the geometrical quantum, being alone directly measurable, must be the principle of the dynamical. In Mechanics, he thinks, all densities are to be regarded, in the last analysis, as equal. He has perceived the important fact that all mathematical measurement is ultimately geometrical, but has un-

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accountably deserted acceleration, the true geometrical equivalent, in favour of volume. This leads him into several errors, of which the most important is that he regards the hypothesis of centres of force as necessarily sacrificing mass. A point, he thinks, cannot contain a finite mass. Dynamism, he says, sacrifices the correlation of force and mass, and hypostatizes force. So far is this from being the case, a supporter of Dynamism might retort, that this view alone realizes force to be the only necessary correlate of mass, whereas you regard extension also as necessary. The whole section on Dynamism (pp. 100—112), in spite of an excellent statement of the grounds in its favour, is weak and inconclusive. This is the more unpardonable, as the chief motive for the hypothesis is that it overcomes two, at least, of the antinomies on which Hannequin relies, namely the divisible indivisible, and the elasticity of perfectly hard atoms. Moreover, in his second book he admits, with Lotze, the metaphysical possibility of action at a distance, and even the view that distance itself is a kind or degree of interaction between monads (p. 381). His position on this point, therefore, is very difficult to understand. The connection of mass with volume also leads him to regard the difficulty as to the finite or infinite number of atoms as insuperable. Wundt's hypothesis, which attributes a diminishing density to matter in very distant parts of space, and thus makes the totality of mass the sum of an infinite convergent series, is rejected, because there would still, on this view, be an infinite volume of matter, and therefore, according to Hannequin, an infinite mass (p. 140).

Thus the main results of this chapter are two antinomies: the atoms must be perfectly hard and yet perfectly elastic, and their number must be both finite and infinite. Both these difficulties are inherent in the nature of an atom, as a discrete element postulated by our methods in a continuum. Both remain inevitable, if we admit the connection between mass and volume: but since both are overcome by Dynamism, a more careful criticism of this hypothesis should have been given, and its own difficulties should have been treated at length. The only justification for treating it lightly is, I suppose, that it has not found favour with many scientific men, who in general regard action at a distance as inconceivable. But where the main thesis is the inadequacy of scientific notions, this justification becomes rather slender.

The third chapter, which deals with the atom in chemistry, in physical optics, and in electromagnetism, is much indebted to Stallo's *Concepts of Modern Physics* which it follows closely. The same difficulties are dealt with, the same authorities are quoted. The chemical atom, it argues, cannot be regarded as ultimate, for the energy of combination cannot, unless we allow action at a distance, be explained without a fresh regress. Dulong and Petit's law, also (connecting atomic weight and specific heat), which at first promised assistance to chemical atomism, has been found in some cases to require a further division of the atoms. Passing to physical optics,

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the transversality of light-waves can only be explained, as Fresnel has shown, by regarding the ether as discrete; and the same assumption is required to account for the dispersion of light. We thus get a fresh atom, the atom of luminiferous ether: but this in its turn cannot explain electromagnetism, which requires a different ether: and no explanation whatever seems possible, as yet, of the instantaneous action of gravity.

Sir W. Thomson's vortex atoms in a homogeneous fluid, in spite of their mathematical advantages, are untenable as a philosophy of nature, for motion, as Hannequin very justly points out, becomes meaningless in a perfectly homogeneous medium: there is no change when two parts have replaced each other, and therefore there is no true motion. Only by destroying the homogeneity of mere space can motion become an intelligible conception.

Thus science, under the name of ether, multiplies very dissimilar media in the same space, as its needs require. The properties of the whole reappear in the atom, which, as Sir William Thomson has said, must be a microcosm containing all the qualities it is designed to explain. The indivisible—so Hannequin concludes (p. 240)—cannot become an individual, nor can the individual be resolved into indivisibles. The true atom must be regarded, not as an indivisible, but as an individual.

This brings us to the second book, whose aim is to construct a metaphysic in which the atom shall find its place as a necessary appearance, and shall be brought into relation with the Real—a legitimate undertaking, no doubt, but one which, it would seem, demands a criticism of all the sciences, not merely of those which call themselves exact. For the transition, from so abstract a category as quantity, to any category which should be adequate to a self-consistent reality, is so abrupt that little connection is apparent between the two books. Moreover, it is difficult to see on what principle our author intends to construct his reality: in the first book, the atom has been condemned as appearance on the sole ground of logical contradiction, and we should therefore expect to find self-consistency the test of the Real. But in the second book, the first chapter, on Becoming, declares the mere fact that we know and think Becoming sufficient to prove its reality outside our thought (p. 248). An attempt is made (pp. 323—328), though with little success, to overcome the well-known difficulties of assigning reality to change (which is not distinguished from Becoming), and in the course of this attempt (p. 324), the principle of contradiction is declared to have a merely logical import, and to apply to the real, at most, only in so far as we think it. What other principle we can use, or how we are to know the real except as we think it, it is very hard to see. Causality is suggested as the principle required (p. 290), but in practice, the principle used is the necessity of freeing causality from contradictions, which thus reduces itself to self-consistency. To change alone this principle is not applied; but as the difficulties of change seem almost equally insuperable whether

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we admit or deny its reality, some inconsistency on this point is perhaps excusable.

The problem of the second chapter, on Being, is so to construct Being that the action of one thing upon another may be intelligible. This leads Hannequin, as it led Lotze, to a monadism in which the monads interact, and are dependent in part on their relations to other monads. The whole chapter, as also much of the following chapter on appearance, is thoroughly Lotzean: it uses similar arguments, and arrives at very similar conclusions.

The chapter on Appearance is concerned with the relation of spatio-temporal phenomena, *i.e.* motions, to what Hannequin calls real becoming, or the changes of reality. Space and time are regarded, with Kant, as subjective *à priori* forms, but phenomenal motions are supposed to be due to the cooperation of the mind with things in themselves, about which our author, in spite of his leanings to Kantianism, has a considerable store of information. The declaration that space is an *à priori* form necessitates an attack on non-Euclidean spaces, which repeats, in the course of two pages (pp. 365—7), all Lotze's mistakes on this subject, which seem, indeed, to have been adopted by philosophical critics of Metageometry as part of their regular stock-in-trade.

It is difficult to reconcile this chapter with the original statement of the difficulties of atomism, which were attributed to the fact that the mind had not created the continuous, and could therefore never fully apprehend it (p. 10). If space be, as Kant maintained, purely subjective, the space-continuum is as much a mental construction as number. If, therefore, as is maintained throughout the work, the mind can know fully whatever it has itself constructed, the ground of all our difficulties with continua vanishes. The author's meaning would seem to be, that space *per se*, as we study it in pure Geometry, is wholly *à priori*, but that phenomenal figures or motions in space, to which we have to apply the category of quantity, contain also an empirical element. It is a pity that he has adopted so lightly the much-controverted position of the Transcendental Aesthetic; the reader is referred to Lotze's Metaphysic (p. 361), and is supplied only with the briefest discussion of the many controversies with which this question bristles.

In a concluding chapter, a résumé is given—admirable in style and lucidity, as indeed are all the résumés throughout the work—which adopts towards the atom a thoroughly Kantian position. We cannot say bodies are organized *ad infinitum*, but only that it is the business of science to organize them without end. Though atomism is the very heart of science, a final atom would be an unconditioned absolute, from which we could return neither to nature nor to continua. But all contradictions are overcome—so the argument concludes—when we give the atom its true sense, as a definite but always complex element, with a minimum of extension and of dynamical properties. In this sense, the atom is an appearance, it is true, but a well-grounded appearance.

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The work is full of interesting information as to the difficulties of science, and is rendered extremely pleasant reading by its clear and lively style. The central proposition, that atomism springs from the conflict of number and continua, gives the argument a unity and a definite bearing, which are wanting, for example, in Stallo's work, to which, as above remarked, our author appears much indebted. As regards the truth of Hannequin's central proposition, it is unavoidable, I think, if, with most men of science, we assume the impossibility of action at a distance, and make also the kindred assumption, criticized above, that there is some necessary correlation between mass and volume. But if, with the advocates of centres of force, we deny these two assumptions, if we admit that a finite mass may be destitute of extension, and may have no spatial attributes but those external relations which constitute localization—then the difficulties of regarding mass as wholly discrete disappear, and the particular difficulty of atomism, which occupies our author, is overcome. Others remain it is true, but these are chiefly difficulties in the conception of motion, and lie outside the domain of the present work. For this reason, I think, the conflict between number and continua, though a fruitful source of contradictions, is not alone sufficient to condemn every possible form of atomism.

Despite certain faults of detail, and despite the inadequacy of the second book, the work is important and has very solid merits. It is a serious attempt at a unified and systematic Philosophy of Nature, and well deserves the attention of all who are interested in the philosophical bearings of the atomic theory.

B. RUSSELL.

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VIII.—NEW BOOKS.

The Metaphysical Basis of Plato's Ethics. By ARTHUR BERNARD COOK, M.A., Fellow of Trinity College, Cambridge. Cambridge: Deighton, Bell & Co. London: George Bell & Sons, 1895. Pp. ix., xv., 152. Index Locorum, 153—160.

THOUGH the aim of this book is to explain the connection between Plato's metaphysics and Plato's ethics, its main interest lies in the fact that the attempt has led the author "to reinterpret the metaphysical scheme that underlay the ethics of matured Platonism." The evidence for this reinterpretation is taken chiefly from four passages. A brief statement of the author's results in each case will best serve the purpose of conveying an impression of the nature of the book.

The first passage examined is 132 B seq. of the *Parmenides*, where Parmenides criticises Socrates's suggestion that an εἶδος is a νόημα existing only ἐν ψυχαῖς, and shows that a νόημα implies a real object (ὄν τι) and that the suggestion leads to the dilemma that either all things (particulars, which exist by μέθεξις with the εἴδη and therefore are ἐκ νοημάτων, as well as εἴδη) think, or there are νοήματα which are ἀνόητα (*i.e.*, roughly, there are thoughts without a thinker). Mr Cook explains very clearly that both alternatives of the dilemma conflict with the principle that νοήματα (=νοητὰ) νοεῖ, which is common to the historical Parmenides and to Plato and is the well-known doctrine of Aristotle that in the case of τὰ ἄνευ ὕλης the operation of the mind is identical with its object, and goes on to infer that Plato therefore posited "*a single really existent Mind as basis and conditioning cause of a series of really existent Minds called the Ideas*,—the object of thought for any given Mind being itself or any other Mind." The inference, in so far as it determines the Ideas as a series of *different* Minds, will hardly command assent, as it has no sufficiently explicit warrant in the text. Nor is it easy to see how one Mind can be said to think another mind, which would imply two operations concerned with the same object. This is perhaps to misinterpret the author's meaning; but that the misinterpretation is to some extent justified will appear from the following statement (p. 10): "It is one thing to assert that the object of thought is incorporeal (even the Stoics went thus far) and another thing to hold that the thoughts of the thinking soul are themselves capable of thinking."

The next passage examined is 248 C of the *Sophist*, where the Eleatic stranger shows that if οὐσία is ἀπαθής it cannot be known (γιγνώσκεσθαι). Mr Cook infers that τὸ παντελῶς ὄν as the subject and object of νόησις is ἀπαθής, but that it must necessarily pass into the domain of ποιεῖν καὶ πάσχειν, where it is the object of γνῶσις. Again the inference seems open to objection. Instead of distinguishing two kinds of knowledge, it is

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possible to distinguish two senses of πάσχειν and to deny πάθησις of οὐσία and νόησις in the lower sense only. And is it the case that Plato uses γνῶσις to distinguish the lower kind of knowledge, and not merely as a general word for knowledge? For instance in *Republic* 479 C γιγνώσκειν is used to designate the higher kind of knowledge, as distinct from the lower.

A consideration of the reference to Plato in *De Anima* I. 2 leads Mr Cook to the further conclusion that every νοητὸν ζῷον "evolves itself through four phases or conditions," νόησις, ἐπιστήμη, δόξα, αἴσθησις (of which the last three=γνῶσις) and that "the objects of cognition of any such ἔμψυχον are the remaining and similarly constructed ἔμψυχα." The interpretation given of this very difficult passage is most interesting and well worthy of attention, though exception might be taken to the rendering of τὰ δ' ἄλλα in 404 b 21 as 'the other νοητὰ ζῷα.'

But the primary support of Mr Cook's reinterpretation of Plato's metaphysics is taken from the *Timaeus* itself, which is the main subject of discussion throughout Part II. In the section called 'Purpose and Necessity' the chief conclusions are that βούλησις is coextensive with νόησις and that, while the Ideas (=τὰ πολλὰ of the *Philebus* and *Parmenides*) are due to νόησις, the phases of soul other and lower than νοῦς are due to ἀνάγκη or ἡ πλανωμένη αἰτία (=θάτερον). To these results no objection can be raised. But graver difficulties are encountered in the next two sections. In discussing 'Identity and Difference' Mr Cook declares that the ἑτερότης of τὸ ἓν must not be confounded either with τὰ πολλὰ or with their ἑτερότης. The metaphysical interpretation, he says, of ταὐτὸν καὶ θάτερον is to be distinguished from the logical. Thus τὰ πολλά, according to Mr Cook, are not to be regarded metaphysically as the species intermediate between a genus and the ἀπειρία of particulars: if they were so regarded, the ἑτερότης of τὰ πολλὰ would be the same as the ἑτερότης of τὸ ἕν. This divorce of metaphysics and logic in the case of Plato naturally excites distrust, and one turns with expectation to the next section, called 'Theology,' where a "more precise determination" of the matter is promised. This, we find, consists chiefly in the identification of the ἑτερότης of the supreme θεὸς θεῶν with the θεοὶ θεῶν of *Tim.* 41 A and with the starry ζῷα. Besides other evidence Mr Cook lays special stress on the reference to the planets and the fixed stars in 38 E, 40 B between the first brew of soul (35 A—36 E) and the second (41 D). "Whence," he asks, "came the animation of these ζῷα?" for the first mixture of soul had been entirely used up in the making of the cosmic soul. His reply is that these ζῷα are the ἑτερότης of τὸ ἕν, the supreme νοητὸν ζῷον. But surely a more obvious answer is possible. The souls of the planets and fixed stars are *parts* of the cosmic soul, which was divided into eight circles (*Tim.* 36 B C D), and do not require for their explanation a separate ἑτερότης of τὸ ἕν. Mr Cook seems here to have neglected the fact that the exposition in the *Timaeus* is not straightforward, but constantly anticipates and repeats itself. And Plato makes two statements whose importance Mr Cook seems to have underrated. (1) In *Tim.* 31 A the κόσμος is said to be a unique μίμημα of a unique παράδειγμα. It is not enough to assert that "a unique particular is a contradiction in terms": it is necessary also to explain this passage. (2) In *Tim.* 39 E, 40 AB Plato says that the stars are the embodiment of one of the four species of the generic ζῷον (αἱ ἰδέαι ἐνοῦσαι τῷ ὃ ἔστι ζῷον). This ἰδέα (the οὐράνιον θεῶν γένος) is superior to the other species, and closer akin to the supreme νοητὸν ζῷον, but it is clearly distinguished from it.

The last part (III) contains an account of Plato's ethics, based on the metaphysics of the preceding parts.

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Within the limits of a short notice, it is easier to raise objections to Mr Cook's arguments than to do justice to the learning and originality of his work. He belongs to the present school of Cambridge Platonists, and goes so far as to subscribe to Mr Jackson's chief tenets. His work has the conspicuous merit of trying to understand and to explain Plato as a whole. But in this attempt Mr Cook perhaps tends to unify too much and to sacrifice accuracy and breadth of generalisation for the sake of a brilliant result. In particular, the *Timaeus* is rated too highly, perhaps, and there is a tendency to accommodate to it the more important dialectical dialogues.

R. P. HARDIE.

A new Natural Theology, based upon the Doctrine of Evolution. By Rev. J. MORRIS, M.A., formerly Fellow of the University of Durham. London: Rivington, Percival and Co., 1896. Pp. xxiv., 347.

In many respects this book is deserving of great praise. It is an honest and strenuous attempt to build up a new Natural Theology by interpretation of the results of modern science. The author has evidently taken great pains to equip himself for this task. He has made a careful study of physics and biology in their recent developments; and he has not neglected philosophical literature, though he does not utilise it to the same extent. His general result is concentrated in the following quotation: "If we attentively consider the process of Nature, we shall observe that, in the physical and protoplasmic orders of evolution, there is no change of relation which, however in accordance with law and order, is not a further evolution of physical or protoplasmic relations, and as such contributory to the Purpose in evolution, infinitesimally, it may be, but not the less truly. Changes of relation must therefore, directly or indirectly, be due to Intelligence. Nature is a process of establishment of relations, and Intelligence, we know from the case of man, to be an agent in the establishment of relations; also no other means of establishing relations can be conceived than Intelligence, and, as the existence of a Purpose in evolution proves that an Intelligence is operative in the universe, it is a fair inference that this Intelligence presides over the process of Nature, and governs its establishment of relations. The continuity of Nature is a very abiding Act of God, and its uniformity is nothing more than an expression of the unchangeable Will of God." (Pp. 303—304.) The argument which leads to these conclusions is in the main carefully and closely worked out. The weakest point in the chain appears to us to lie in the transition from the protoplasmic to the mental order of evolution. The law of psycho-physical parallelism is summarily rejected, because it does not enable us to understand the nature and origin of intelligence. Here there seems to be a confusion of two distinct questions: (1) Is psycho-physical parallelism a fact? (2) Does it yield a rational explanation of the existence and nature of consciousness? We may answer the first question in the affirmative, and the second in the negative. The first is merely a question of scientific evidence; the second is metaphysical. We do not think that Mr Morris has fairly realised the position of those who regard the whole material order as continuous within itself, to the exclusion of intervening mental agency. We even think that he might have given up this point, and yet have retained the main outline of his argument. There would still have been objections to urge against it; but these would have been mainly of a metaphysical character.

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The Philosophy of Thomas Hill Green. By W. H. FAIRBROTHER, M.A., Lecturer in Philosophy at Lincoln College, Oxford. London: Methuen & Co., 1896. Pp. viii., 187.

The greater part of this book consists of a detailed exposition of Green's philosophy, with very copious quotations from the original. The account is both clear and accurate, and it would be difficult to do it better. Whether it was worth doing at all may be doubted. Green is undoubtedly a most thoughtful and suggestive writer, and, whatever may be the absolute worth of his views, a student can scarcely fail to derive much profit from a careful study of his works. But why should a commentary be necessary? His works are not unduly voluminous, they are not confused by the terminology or the method of a bygone age, and they present no confusing changes of opinion from time to time. That there is sometimes a certain obscurity in his style must be admitted, but it does not afford a greater obstacle than the student may be reasonably called on to overcome for himself. Any undergraduate of good ability and industry ought to be able to read Green without a commentary. And the remainder, we venture to suggest, ought not to read him at all. But, once granted that such a commentary is to exist, it must be admitted that Mr Fairbrother has made a very good one.

The last chapter—entitled "Green and His Critics"—deals with some of the objections urged by Dr Sidgwick, Professor Seth, and Mr Balfour against Green's position. To consider the validity of Mr Fairbrother's defence would involve a general criticism of the "Prolegomena to Ethics," and would also be difficult owing to the very condensed form in which they are put, which renders them rather obscure.

Evolution and Man's Place in Nature. By HENRY CALDERWOOD, LL.D., F.R.S.E., Professor of Moral Philosophy, University of Edinburgh. Second Edition. London: Macmillan & Co., 1896. Pp. viii., 311.

The First Edition of this work was noticed in *Mind*, N. S. No. 6, page 49. In his preface to the Second Edition Professor Calderwood states that almost the whole has been re-written, so that it is virtually a new book. He has been induced by the criticisms of the work in its older form to state in greater detail the lines of evidence which he uses to support his conclusions. But in spite of change in form of statement, and of greater elaboration in detail, it is difficult to find anything fresh to say about the new Edition. The leading positions maintained in it are unaltered; and, though illustrative details are supplied in greater fulness, no serious attempt is made to advance the argument by showing more clearly the logical connexion between the materials adduced and the conclusions which Professor Calderwood would draw from them. But this is the vital point at issue.

The Growth of the Brain: a Study of the Nervous System in Relation to Education. By H. H. DONALDSON. London: Walter Scott. New York: Charles Scribner's Sons, 1895. Pp. 374.

"I have sought especially to emphasise some more neglected points. Let me enumerate a few: the growth of the nervous system compared with that of the body; the interpretation of brain weight in terms of cell structure; the early limitation of the number of nerve cells; the peculiar relation in this system between increase in size and in organisation; the large though variable number of cells which have but slight importance in the final structure; the dominance of nutritive conditions; the wide

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diffusion of nerve impulses; the incompleteness of repose; the reflex nature of all responses; the native character of mental powers; and the comparative insignificance of formal education."

So the author in his Preface. The book may be cordially recommended. The chapters on physiological rhythms, on the education of the nervous system and on "the wider view"—the brain as the organ of mind, individual and social—are of great pedagogical and psychological interest.

Social Rights and Duties. Addresses to Ethical Societies. By LESLIE STEPHEN. In Two Volumes. London: Swan Sonnenschein & Co., 1896. Pp. 255, 267.

The topics treated of are, The Aims of Ethical Societies, Science and Politics, The Sphere of Political Economy, The Morality of Competition, Social Equality, Ethics and the Struggle for Existence, Heredity, Punishment, Luxury, The Duties of Authors, The Vanity of Philosophising, Forgotten Benefactors. Mr Leslie Stephen is at his best in these two volumes. They are full of delight and instruction, both for the general reader and for the special student of Ethics.

The Individual and the State: an Essay on Justice. By T. W. TAYLOR. Boston, U.S.A., and London: Ginn & Co. 1895. Pp. 90.

Concludes that "the ideal of justice is purely subjective, binding only upon the individual holding it, and not applicable as a test of rightness or wrongness of any existing conditions. Society is an inexplicable ultimate from which no concept of justice possessing objective validity can be deduced."

Outlines of Logic and Metaphysics. By J. E. ERDMANN. Translated from the 4th ed. with prefatory essay, by B. C. BURT. London: Swan Sonnenschein & Co.; New York: Macmillan & Co. 1896. Pp. xviii., 253.

The translation is accurate, but very literal. This, and the inherent difficulty of the treatise, make it doubtful whether the work will have much vogue as an 'introductory science text-book.' The translator's prefatory essay (on the nature and subject-matter of logic, on its relation to natural science, and on Hegel and Erdmann) is easily and interestingly written.

On Germinal Selection. By AUGUST WEISMANN. Chicago: The Open Court Publishing Co., 1896. Pp. xii., 61.

A translation of a paper read at the International Congress of Zoologists in 1895. The author has written a preface, modified the text in places, and added an appendix. The translator supplies an index.

The Englishing is accurate, and more idiomatic than many of the Open Court translations have been.

Le Psittacisme et la Pensée Symbolique. Par L. DUGAS. Agrégé de philosophie, Docteur ès lettres. Paris: Félix Alcan, 1896. Pp. 202.

This book is an essay on the psychology of nominalism. It is divided into two parts. In the first part the author treats of what he calls Psittacism. By this he means the employment of words when we do not know their meaning. He holds that Psittacism is but the caricature of a normal psychological fact, symbolic thought. It is thus of various kinds. We have an instance of complete Psittacism when the words used

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in a dialogue have no meaning for either party. Incomplete Psittacism consists in the inexact interpretation of other persons' language. Such misunderstanding is due to the difference among people as regards age, culture, experience &c. Further, language is never adequate to thought. It is statical, while thought is dynamical. It is discrete, while thought is continuous. Nevertheless the use of language has its advantages. It records our thoughts and so prevents them from total oblivion. Besides, it extends our conceptions. The simplest arithmetical operations surpass our imagination, and we have to call in the aid of symbols. Such *significant* symbols are better than *expressive* ones *i.e.* those which represent more or less imperfectly the very objects themselves, as in onomatopœic words.

The second part deals with symbolic thought and is more directly interesting to the psychologist. The author maintains that all knowledge is a language and that progress in it is marked by a simplification of its terms. Even sensation is symbolic of its physical and physiological causes. Images are more so, and are better adapted for signs than sensations. For they are under voluntary control. We advance a stage further, when we come to the generic image. Finally, there is the concept. It is here that the author adopts the nominalistic position. The mind has no abstract and general ideas. But it has the equivalent of such ideas in considering particular and concrete ideas as *capable of being replaced* by other similar particular and concrete ideas. A general idea is but a particular idea taken *indifferently* from among other particular ideas of the same kind. The complex operation here involved comprehends a *name*, a *tendency* or *capacity* of calling up like ideas and one or more *particular* ideas. It is the aim of science to make this tendency exact. This symbolism is a necessary part of mental economy. "The march of the mind, like the movement of bodies, is always along the line of least resistance" (p. 195).

W. F. Trotter.

Le Bien et le Mal. Essai sur la Morale considérée comme Sociologie Première. Par E. de Roberty, Professeur à l'Université Nouvelle de Bruxelles. Paris: Félix Alcan, 1896. Pp. xxiv., 237.

Whatever views M. de Roberty does not like he calls obsolete, and so disposes of them. Everything in the nature of Theology or Metaphysics he regards as a mere survival of the unscientific past. This past itself he is willing to patronize. He is forward to point out in its Theology and Metaphysics creditable forecasts of his own more enlightened position. But the Metaphysics and Theology of the present day are for him merely objects of abhorrence and contempt. On the special subjects which his book claims to treat of he does not seem to us to throw much light. He is constantly reiterating that sociality is morality, but he does little to define this view, or to maintain it against obvious objections. Nor does he define Good and Evil; he merely says that they pass into one another, so that what is good at one time is evil at another, as social conditions vary. This is part of his general doctrine of the Identity of Contraries, which seems to be a vague reflexion of Hegelian thought.

De la Croyance. Par Jules Payot. Paris: Félix Alcan (Bibliothèque de Philosophie Contemporaine), 1896. Pp. 248.

An analysis of the psychology and philosophy of belief by the author of *L'Éducation de la Volonté* in the above-named series. After an introductory analysis of 'certainty,' which is found to be a specific form of belief, the subject is disposed of in three books as follows:—On the Object

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of Belief; the Nature of Belief; on the Mechanism of Belief. The monograph, while failing to keep sufficiently and consciously distinct the psychological and the philosophical aspects of belief, is vigorously and interestingly written, abounding with striking utterances that should prove, if not convincing, at least suggestive. The author holds that belief has not been adequately explained by 'intellectualist theories.' We believe, not with the intellect only, but "with all that we are, *avec notre corps aussi bien qu'avec notre sensibilité et notre intelligence.*" Between belief and volition there is only a difference of degree. *Croire, c'est se retenir d'agir.* In this connexion he takes to task Associationism as represented by J. S. Mill, while ignoring the emphasis given to the conational factor in belief in the later Associationism of Professor Bain. His paraphrase of his formula of belief, 'for the benefit of minds not thoroughly *informés*,' falls back on terms of intellection (not to say of feeling). 'To believe is to have the sensation *très nette et aucunement entravée* that verification will follow our pre-imagination of the future.' The book concludes with practical considerations on the necessity of educating democracy in belief.

Le Mouvement Idéaliste, et la réaction contre la science positive. Par ALFRED FOUILLÉE. Paris: Félix Alcan, 1896. Pp. lxviii., 348.

L'Année Philosophique. Publiée sous la direction de F. PILLON. Paris: Félix Alcan, 1896. Pp. 314.

Perhaps no two thinkers have done so much for the cause of philosophy in France during the past generation as Fouillée and Renouvier; and these two volumes show that even now they have lost little of their ancient vigour. What is most characteristic of Fouillée is the width and breadth of his views. He stands out as the champion of all the main interests of mankind, and makes it his one aim to combine these in harmonious unity. As the advocate of idea-forces he strenuously denies the adequacy of any purely mechanical view of the universe. On the other hand, he is a strenuous and forcible opponent of everything that savours of mysticism. For him, as for Hegel, the rational is the real, and the real is the rational, —at least so far as it is any concern of ours. Renouvier's mind, on the contrary, though not so large and sympathetic, has perhaps a finer and a keener edge. He excels in the precise and distinct formulation of ideas which are difficult to formulate distinctly and precisely. This power he uses in a large measure for the defence of doctrines which are apt to be regarded as vague and mystical. He indeed ruthlessly rejects what he considers unintelligible; but for him the unintelligible is identified with the self-contradictory. Using this criterion, he rejects the infinity of the world in space and time, because it involves the conception of a number which cannot be numbered. On the other hand, he finds no contradiction in the conception of indeterminism, or the equal possibility of exclusive alternatives. Such categories as that of causality are mere postulates of our subjective intelligence, which may be set aside by other postulates, such as the ethical demand for free-will. At this point he comes into collision with Fouillée, who finds in every form of indeterminism a mysticism and obscurity irreconcilable with the claims of science and philosophy.

The two books before us express this opposition of thought and sentiment in a typical form. M. Fouillée's work is one long onslaught on the philosophy of contingency. The *Année Philosophique* contains an express reply to Fouillée's criticism in an extremely able article by M. Dauriac, entitled "Pour la Philosophie de la Contingence." M. Renouvier has also much to say in defence of the freedom of contingent choice, as

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well as of his other characteristic doctrines, in an essay on "Doute ou Croyance." The merits of the controversy will be dealt with in a future number of *Mind*.

M. Pillon in the *Année Philosophique* continues his fascinating series of Articles on the Evolution of Idealism in the XVIIIth Century by an interesting account of the idealism of Lanion and the scepticism of Bayle.

Der Geist der neueren Philosophie. Von ROBERT SCHELLWIEN. Zweiter Theil. Leipzig: Alfred Janssen. London: Williams & Norgate, 1896. Pp. 168.

The second part of this work continues, in the manner of the first, to bring to the surface the tendency towards freedom, which, according to the author, is the goal of modern philosophies (p. 53). The interpretation given to Spinoza enables his system to be closely connected with that of Leibniz—with both substance is a living working power, but in the first case universal, in the second individual and plural (p. 11). From Leibniz we are to learn that consciousness is coextensive with the whole range of the psychical life, and also the unity, and, at the same time, the difference of the divine and human lives in contradistinction to the one-sided unity of Spinoza (p. 22). Leibniz is connected with Kant through Jacobi rather than by Berkeley, of whom, indeed, it is strange to note there is no mention. It is remarkable also to find a statement that philosophies of freedom succeed each other almost in a straight line, and yet there is no mention of realism or empiricism until after the time of Hegel. The dialectical process in the union of contradictions (which plays an important part in the work) is brought to bear upon the component parts of each system in detail, and one cannot help feeling that the ultimate synthesis would have been stronger and more convincing if it had rested upon a wider basis.

A careful criticism of Kant occupies nearly forty pages. The limitation of knowledge to phenomena and the transcendental unity of apperception are examined; and against the first it is contended, that, though an individual thing is not a thing *per se*, it is in truth the Ego known *a posteriori;* for this Ego is all that is (p. 49). Moreover the Ego is Will, the absolute subject and knowledge is simply the life of the absolute self. Thus Kant's dualism of the Theoretical and Practical Reason is to be overcome—the Ego is Will and in so far as it is limited and determined it appears as an individual, behind which is the true absolute, the Will "an sich." This criticism has much dialectic point, but it often errs on the side of dogmatism,—Kant's position is often simply denied, without any reason being given, and an opposite theory is propounded which in the end must stand by its internal consistency,—indeed, in many of the criticisms here and elsewhere, it appears that the author (as he somewhere says of another philosopher) is talking to an opponent, and neither understands the other's language.

Fichte's great merit is that Knowledge and Being are one, (p. 77) but he misses the truth in making the merely human sphere his starting point, whence follows "the untenable onesidedness of Idealism to the present day." As so much has been said of the dialectic movement, the few pages given to Hegel are of great interest. It is contended that the "Geist" of Hegel is not the true "Geist," (p. 119) neither is the Hegelian Nature the true Nature—if Nature were only the opposite of spirit or mind it would be absolute nothing. Further the Ego must recognise its own inner life as Will—this *is* its life—hence I can only truly know the notion as my own function, not myself as a function of the notion (p. 121).

Now that Will has been vindicated as the true starting-point, the

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system of Schopenhauer ought to follow next, so that according to the order of discussion the Will of Schellwien should be differentiated from that of Schopenhauer. Instead there is a belated discussion of Realism and Natural Science, which, if seriously intended, should have appeared before—or indeed a more consistent attitude would be to deny the theories mentioned any right to be included as philosophical in the idealistic sense in which the term is used throughout. The objection made to Schopenhauer is that he looks at Will from the outside, that his Will is empirical and hence phenomenal, while the true Will is *per se* and identical with Consciousness.

The concluding chapter is a constructive outline of a system in accordance with the points won in the previous criticism. Unfortunately it is all too short to be included in this notice, for, though it only consists of eleven pages, the argument is so condensed that no brief summary could do justice to it. One point may possibly illustrate something of the general tendency. "The system of man's life" is divided into Religion, Theory of Knowledge, Æsthetics and Ethics (p. 160), in which the prominence given to Religion—the knowledge of the unity and difference of God and Man,—as well as the position assigned to Æsthetics are remarkable.

W. R. SCOTT.

Grundriss der Geschichte der Philosophie. Von JOHANN EDUARD ERDMANN Vierte Auflage, bearbeitet von BENNO ERDMANN. Zweiter Band. London: Williams and Norgate, 1896.

We quote the following from the Preface to this Fourth Edition of a classical work: "Die Inhaltsänderungen des zweiten Bandes treffen hauptsächlich die beiden ersten sowie den Anfang der dritten Periode der 'Philosophie der Neuzeit.'".....*"J. Ed. Erdmanns* Rekonstruktion der Lehre *Kants* ist durch seine Schulstellung bedingt.".....*"*An ihr also durfte nichts geändert werden.".....*"*Ich habe mich bemüht, die Bemerkungen über die Kantliteratur der letzten Jahrzehnte, die ich hineingearbeitet habe, so zu fassen, dass sie dem Gesamtcharakter der Darstellung entsprechen. Aus den gleichen Gründen durfte ich ebenso wenig an den Ausführungen über die Entwicklung von *Fichte* bis auf *Hegel* ändern. Abgesehen von den selbstverständlichen Nachträgen habe ich nur eine Reihe von Notizen eingefügt, die dazu dienen sollen, die aus unmittelbaren Erlebnissen entsprungenen Darlegungen des Verfassers den Spätergeborenen bequem verständlich zu machen. Die etwas kargen biographischen Mitteilungen über *Herbart* und *Schopenhauer* habe ich ergänzt. Ein ähnliches Verfahren habe ich bei der Revision des Anhangs eingeschlagen. Schwer ist es mir geworden, die gebotene Zurückhaltung auch hinsichtlich der Entwicklungsbedingungen und des Entwicklungsverlaufs der Philosophie des siebzehnten Jahrhunderts, sowie der englischen, französischen und deutschen Aufklärungsphilosophie zu üben. Schliesslich bot sich auch hier ein Weg, im einzelnen so zu ändern, dass der Leser in den Stand gesetzt wird, die Umbildung unserer historischen Auffassung zu erkennen, und sich auf Grund der literarischen Nachweise genauer zu unterrichten.....Auch diesem zweiten Bande sind nicht wenige handschriftliche Zusätze des Verfassers, die ich fast durchweg einfach aufnehmen durfte, zu gut gekommen."

Grundriss der Psychologie. Von WILHELM WUNDT. Leipzig: Wilhelm Engelmann, 1896. London: Williams & Norgate. Pp. xvi., 392.

Professor Wundt's new book, primarily intended to supplement his lectures, will be generally welcomed as the first complete exposition of the

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author's psychological system. "I have treated psychology," he remarks in the preface, "in the *Grundsüge* mainly in its relation to physiology, and in the *Vorlesungen* with a view to its bearing on questions of philosophical interest. This *Grundriss* is an attempt to bring forward the most important and essential facts of psychology in their purely psychological connexion and in the systematic arrangement of which, in my opinion, the nature of the subject fully admits." Three principles are stated as fundamental: (1) That psychological experience is immediate experience in general, (2) That this immediate experience is not a fixed content, but consists of processes, which are the particular experiences common to mankind, (3) That every such process is a subjective process, and has an objective content. Thus psychology is regarded as complementary to the natural sciences, which, abstracting from the subject, deal with experience as mediate. Light may sometimes be thrown on psychological problems by regarding them from the point of view of physiology; but only psychological analysis can explain them. By such analysis all psychical processes can be resolved into pure sensations and simple feelings. Sensations are psychical contents regarded abstractly as objects, feelings are subjective; and though, for purposes of exposition, the two kinds of element are treated as distinct, there is no psychical content into which both do not enter. The typical psychological process is, accordingly, the process of Will. Critical notice will follow.

Die Psychologie in der Religionswissenschaft. Gruhdlegung von Dr Emil Koch. Freiburg i. B. und Leipzig: Mohr, 1896. Pp. 146.

A contribution to the controversy among theologians as to the function and validity of psychology in the 'science of religion.' The presentation of a most interesting subject is somewhat weakened by an apologetic tone, a lack of clear and incisive style and a method without crisp outline. The six chapters are entitled:—(1 and 2) On the subjection (lit. servitude) of psychology in the science of religion; (3) the problems of the psychology of religion; (4) the determination of the psychological object (*Gegenstand*); (5) the nature of objective consciousness in religious experiences; (6) investigations concerning the Infinite. The "heaviest bondage" to which psychology is still subjected is, according to the author, in that by its standpoint and definitions it is but a branch of metaphysic. He seems however to confuse metaphysical psychology with subjective psychology.

Il Concetto della Storia nelle sue Relazioni col Concetto dell' Arte. Da Benedetto Croce. 2a edizione. Roma, 1896. Pp. 143.

The question discussed in this little volume is whether history should be considered as an art or as a science; which necessitates the discussion of two other questions: What is art, and, What is science? Some hold that art is a representation of beauty; and of these again some maintain that beauty is a pleasure-giving quality. But, according to our author, none except a few French and English pseudo-philosophers will stand up for this last theory, demolished as it has been by Kant's criticism. Mr Herbert Spencer is mentioned as one of these benighted persons, and as a symbol of philosophic mediocrity. His pretensions are sufficiently disposed of by the fact that in quoting Schiller he refers to him as a German author whose name he has forgotten. Whatever may be the true interpretation of beauty, it is not the sole object of art. Art has to do with cognitions, but the knowledge which it imparts is a knowledge of individual objects and particular events, not a knowledge

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of concepts, which is the definition of science. Under which of these two divisions shall we place history? Evidently under the former: it is a knowledge not of universals but of particulars, all attempts to establish a science or philosophy of history having proved unsuccessful. And whatever may be discovered hereafter, it will remain true that narrative history deals only with particulars, and is therefore an art. It has been claimed as one of the descriptive sciences, but this classification involves a confusion of thought. On the one hand some of the sciences so-called, such as botany and zoology, although in a sense descriptive, still deal with general facts, with concepts, and belong to the same order of cognitions as physics and chemistry. On the other hand studies like geology and geography, which are indeed descriptive, but descriptive of particulars only, should not be called sciences: like the record of political events they are true histories, and come under the domain of art.

Evidently Signor Croce's theory is a resultant of the same tendencies as those to which the realistic and psychological schools of fiction are due. The middle third of our century gave birth to several brilliant literary performances in which history was so treated as to produce the effect of poetry or of prose fiction. Then came a number of brilliant critics, with Taine at their head, who used works of art as documents for the scientific reconstruction of history. Thereupon the new generation of artists exclaimed, Go to, let us write and paint documents; and proceeded to do so, with more profit to their own fame and fortune than to the historians of the future. Geography and geology have certainly as much or as little claim to the name of art as some of the literary works due to this tendency; and that Signor Croce should be driven to count them as such is a *reductio ad absurdum* of his whole theory. The ideal of those cognitions is to be reduced to a mass of exact measurements; whereas a work of art when so treated becomes a *caput mortuum*. What vanishes is just the proper aesthetic element, which belongs not to cognition but to feeling. No doubt we can win an aesthetic side from geography, or for that matter from geometry, as the phrase "elegant demonstration" shows; but that is because every energising of the faculties has, within limits, its aesthetic value. Signor Croce, like all his school, labours under the misconception that pleasure-values have some special and not very creditable connexion with the sensual appetites. He denounces the hedonistic theory as degrading art into a purveyor of spiritual cakes or something worse (p. 119), and yet gives himself away on the very next page by declaring that "delight as such is neither noble nor base." I may add that, even admitting art to be a cognition, it could not be pinned down to the category of concrete knowledge. For, as the author himself observes, its domain is not the actual but the possible. That is to say, the artist must create his representations through the knowledge and application of general laws; and he is bound to suggest those laws in some way, to evoke them in the mind of the spectator, in order to be, as the phrase is, "convincing." The geographer is under no such obligation; and that fact would alone prove the absurdity of placing the two in the same class.

ALFRED W. BENN.

Saggi di Filosofia. Vol. I. FRANCESCO DE SARLO. Torino: Carlo Clausen, 1896. Pp. 513.

A collection of essays on the following subjects:—(1) the old and new Phrenology; (2) the notion of Law; (3) the origin of immoral tendencies; (4) muscular sense; (5) the object of Physiological Psychology;

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(6) the Philosophy of Activity. In (1) the materialistic tendency in physiological psychology is arraigned as being little if at all more intelligent than the phrenology it has superseded, or than the older 'badly put problem' of the seat of the soul. The new criminology is no less sternly criticized. "In the actual state of knowledge a true physiological psychology can exist only for the elementary psychical facts of sensation and movement. To keep up the illusion that all the rest of psychology—phenomena of such complexity as memory, practice (*esercizio*), association, psychic perfectibility—can be studied from the physiological and histological standpoint only goes to show, that physiologists, psychiatrists and histologists are lacking in the essential notions of psychology." (2) is a very searching and elaborate inquiry presented under three heads:—genesis and historic development of the notion; various conceptions as to the nature of laws, classed under the three categories:—Intellectualistic (*i.e.* law as relation, or objectively considered), Animistic (*i.e.* law as determination of inner being—as *proprium*—or subjectively considered), and Dualistic (combination of the above); and the essence of law, under which are considered the factors involved in the notion of law and the actual classification of laws, viz. I. functional laws, II. causal laws. Under II. cause is distinguished as law in its becoming, or *nature determined*, and as constant law, or *rhythm*. In (4)—a criticism of research in this field—the author concludes that "we have an immediate apprehension of our spontaneity, of our individual energy, that is absolutely inexplicable by muscular sensations alone." (6) is a review of Professor F. Paulsen's *Einleitung in die Philosophie*.

La Dottrina della Volontà nella Psicologia Inglese dall' Hobbes fino ai tempi nostri. Studio storico-critico. PIETRO SCIASCIA. Palermo: G. Spinnato, 1895. Pp. 164.

A review of the doctrine of association as bearing upon that of conation, another contribution to the group of Italian studies of English psychology by scholars such as Ferri, De Sarlo, etc. The author finds the main defects of Associationism to lie in (i) a defective analysis of the antecedents of an act of volition, and (ii) ambiguous and contradictory language, confusing will now with sensation or conscious representation, now with desire, with the strongest motive, with passion, with a discharge of muscular force, or with appetite. He holds nevertheless that English psychology has laid the foundations of all future investigation. The book concludes with an essay on 'Psychical Activity.'

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L. M. Billia, *Lo Stato al suo Posto*, Milano, 1896, pp. vi., 157.

L. M. Billia, *Che Cosa è l'Educazione*, Torino, G. B. Paravia, 1896, pp. 16.

B. Croce, *Sulla Concezione Materialistica della Storia*, Napoli, Tipografia della Regia Università, 1896, pp. 23.

A. E. Thouverez, *De Quali et Quanto in Logice Formali*, Lutetiae Parisiorum, Félix Alcan, MDCCCXCV, pp. 137.

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IX.—PHILOSOPHICAL PERIODICALS.

PHILOSOPHICAL REVIEW, Vol. V., No. 2. **W. W. Carlile.** 'The Humist Doctrine of Causation.' [It is now extensively believed that causation consists simply in the constant conjunction of events. An examination of Mill's inductive canons shows that this metaphysical belief was a source of nothing but confusion to him in his logical teaching. Cause and effect offer us more than constant connection; they present, if together, a self-subsistent whole, if apart, fragments of a whole, but fragments which bear upon them traces of their relation as fitting into one another. Causation becomes intelligible only when we perceive this underlying identity of the cause and the effect.] **J. E. Creighton.** 'The Nature of Intellectual Synthesis.' [Knowledge is the result of a synthetic activity. Intellectual synthesis is not a function of binding together really existing processes to make a really existing whole, but is the idealisation and interpretation of a content which differs only in degree from the final result.] **A. Gehring.** 'Graeco-Latin and Germanic Art.' [Germanic art-works offer to the mind of the enjoyer more objects simultaneously than do Graeco-Latin art-works. The latter depend for their effectiveness at any moment, more than do the former, on what they immediately present to the enjoyer at that moment. Illustrations from music, literature, architecture, painting and sculpture. Psychological explanation.] Discussion. **F. C. S. Schiller.** 'Non-Euclidean Geometry and the Kantian a priori.' [Value of the conception of a fourth dimension. Light thrown by non-Euclidean geometry on the nature of space. Metageometry furnishes strong weapons against the Kantian account of space.] Reviews of Books. Summaries of Articles. Notices of New Books. Notes.

No. 3. **F. C. S. Schiller.** 'Lotze's Monism.' [Lotze had not on his own principles any ground for seeking an underlying unity of things; his argument in seeking it is unsound, and conflicts with his own truer insight. The unity, when reached, is of no explanatory value; it is not essentially connected with the religious conception of a God, and, even if so connected, contributes nothing of worth to religious philosophy.] **W. Smith.** 'The Category of Substance.' [Substance is an essay towards knowledge...We cannot say a priori whether the emotional or intellectual elements in consciousness furnish the best key for the interpretation of the world. But we can say that it is not by formulæ or abstract categories as such that we reach the world's essence.] **H. Haldar.** 'Some Aspects of Hegel's Philosophy.' [Thought and Being; the categories as the connecting links of experience, and the Absolute as the system of the categories; the transition from Logic to Nature; Thought and Will.] **F. C. Sharp.** 'The Limitation of the Introspective Method in Ethics.' [If ethics is to advance, introspection must be supplemented by objective investigation. Self-elimination, the repression of the demands of the moralist's own nature, are necessary, if there is to be a science of ethics.] Reviews of Books. Summaries of Articles. Notices of New Books. Notes.

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PSYCH. REVIEW, Vol. III., No. 2. **E. C. Sanford.** 'Proceedings of the Fourth Annual Meeting of the American Psychological Association, 1895.' **J. McCattell.** 'Address of the President of the Association, 1895.' [The status and scientific relations of experimental psychology.] **C. A. Strong.** 'Consciousness and Time.' [Criticism of James.] **H. Münsterberg.** 'Studies from the Harvard Psychological Laboratory, IV.' **R. MacDougall.** 'The Physical Characteristics of Attention.' [Observations of breathing, pulse form, blood supply, and muscular tension.] Discussion and Reports. **J. Dewey.** 'The Metaphysical Method in Ethics.' [Criticism of d'Arcy.] **F. Kiesow.** 'Investigation of Cutaneous Sensibility.' [Report of recent German work. **C. L. Herrick.** 'Suspension of the Spatial Consciousness.' 'Focal and Marginal Consciousness.' **Kurella.** 'Natural History of the Criminal.' [Reply to Hume.] **E. W. Scripture, J. R. Angell.** 'Thinking, Feeling and Doing.' [Reply and counter-reply to criticism.] Psychological Literature. New Books. Notes.

No. 3. 'Studies from the Psychological Laboratory of the University of Chicago.' (1) **J. R. Angell, A. W. Moore, J. J. Jegi.** 'Reaction-time: a Study in Attention and Habit.' [Sensorial and muscular times, for sound and light, with hand, foot or lip movement. Partial confirmation of Baldwin's results. Explanation by interrelation of attention and habit.] (2) **L. G. Whitehead.** 'A Study of Visual and Aural Memory Processes.' [Ten of thirteen subjects memorised most quickly from visual presentation. Auditory retention seemed slightly better than visual.] 'Studies from the Harvard Psychological Laboratory, V. **E. Pierce.** 'The Æsthetics of Simple Forms, II. The Functions of the Elements.' ["When the objective conditions fulfil the suggestions aroused by it, then the object satisfies the æsthetic demands."] **J. E. Lough.** 'A new Perimeter.' [Allows movement of the fixation point.] **F. E. Bolton.** 'The Accuracy of Recollection and Observation.' [Follows Cattell (*Science*, Dec. 6, 1895.) Experiments on 92 students; the 'general science' class is more accurate than the 'ancient classical.'] Discussion and Reports. **G. T. Ladd, J. M. Baldwin.** 'Consciousness and Evolution.' **H. Nichols.** 'Pain Nerves.' [Inferences from Head's work in *Brain*.] **G. M. Stratton.** 'The Relation between Psychology and Logic.' [Takes no account of Jerusalem.] **C. L. Herrick.** 'The Testimony of Heart-disease to the Sensory Facies of the Emotions.' Psychological Literature. New Books. Notes.

PSYCHOLOGICAL REVIEW. Extra No. **L. Farrand** and **H. C. Warren.** 'A Bibliography of the Literature of Psychology and Cognate Subjects for 1895.' (The Psychological Index, No. 2.) [A list of 1394 titles, published within two months of its year. As a bibliography, has the defects of haste: wrong initials, unsystematic citation, incorrect references, etc. But a valuable piece of work, whose mistakes, unavoidable under the circumstances, should not mislead any intelligent reader.]

AMER. JOURN. OF PSYCH., Vol. VII., No. 3. **J. H. Leuba.** 'A Study in the Psychology of Religious Phenomena.' ["If religion has any reality, it must perforce express itself in psychic and physiological phenomena. The work of a true science of religion...is to find out what these subjective manifestations are, and then to treat them as it would any other psychic fact....The religious experiences named sense of sin, repentance, remorse, aspirations toward holiness, regeneration (conversion), trust, faith, belong to the same class as the affective problems now under study [by psychologists]...We have undertaken a study of the phenomenon commonly called 'conversion'...We have limited our material to sudden and well-marked cases."] **A. Kirschmann.** 'Colour Saturation.' [Discussion preliminary

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to report of experiments. Apparatus.] **M. W. Calkins.** 'Minor Studies from the Psychological Laboratory of Wellesley College, III.' **S. C. Wood, F. M. Hallam, E. D. Phinney.** 'A Study of the Dream Consciousness.' [Emphasises the individuality of the dream consciousness.] **E. C. Sanford.** 'A Laboratory Course in Physiological Psychology, VI.' [Monocular perception of space.] Psychological Literature. Book Notes. Notes and News. Books received.

REVUE PHILOSOPHIQUE. Vingt et unième Année, No. 2 (Février 1896). **F. le Dantec.** 'La vie et la mort.' [Discusses the life of unicellular organisms. The fundamental vital process is assimilation, all other vital phenomena being secondary accompaniments of this. A very interesting and important article.] **J. Soury.** 'Le lobe occipital et la vision mentale (*Suite*).' **J.-J. Van Biervliet.** 'Nouvelles mesures des illusions visuelles chez les adultes et les enfants.' [Attempts to explain the illusion recently discussed by Brentano, Lipps, Aubert, and Delbœuf. "Lorsque dans l'appréciation des dimensions d'une figure géométrique l'œil, après s'être déplacé dans une direction donnée, vient à se déplacer dans une deuxième direction différente de la précédente, si pour suivre cette direction nouvelle il continue le mouvement primitif, tout en y ajoutant un second mouvement qui modifie le premier, toujours la dimension considérée d'abord sera exagérée au détriment de celle considérée après. De plus l'importance de l'exagération sera en raison inverse de l'intensité du mouvement nouveau ajouté au premier."] Revue Critique, &c.

No. 3 (Mars 1896). **H. Bergson.** 'Mémoire et Reconnaissance (1^er^ article).' [Distinguishes between memory as reproduction of images in the time-order of past experience, and memory as giving rise to new products embodying the result of past experience, and determining appropriate action. Recognition is memory of the second kind. Its essential condition consists in tracing the main outlines of perceived objects by schematic movements.] **F. le Dantec.** 'La vie et la mort. II. Les Métazoaires (*Fin*).' [Applies the writer's theory to metazoa. M. Dantec's views have been recently embodied in a book which will be noticed in *Mind* in due course.] **J. Soury.** 'Le lobe occipital et la vision mentale (*Fin*). Observations et Documents, &c.

REVUE DE MÉTAPHYSIQUE ET DE MORALE. 4^e^ année, No. 2, Mars, 1896. **G. Remacle.** 'Recherche d'une méthode en Psychologie' (1^er^ article). [Mankind, in their determination of the non-ego, imply that the function of representation does not express the essence of the soul. This corroborates a hypothesis put forward by the author that psychology is not a *science*, but 'the *art* of realising the soul according to a certain ideal.' Method in psychology is the expression of this latent ideal, and the enunciation of the processes proper to its attainment. The writer seeks to determine the ideal which psychological method ought to express. With this end in view, he criticises the way in which Mill and others formulate the object of psychology. The desire of constructing a psychology is but the desire of knowing, *i.e.* of realising ourselves. It is a systematisation of the diverse processes of daily life, which without this are unharmonised. The effort to construct a psychology expresses the same tendency in us as do the isolated processes of self-realisation going on in our daily life—the tendency *à l'expansion dans la durée.*] **G. Simmel.** 'Sur quelques relations de la pensée théorique avec les intérêts pratiques.' [Proposes to examine at what point, and in what way, our knowledge takes root in our power to will and act.] **A. Spir.** 'La norme de la pensée et l'enchaînement des choses' (5^ème^ article). [Only the True conforms to the Absolute nature of

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things; the False has no absolute character. Idealism such as that of Hegel, Fichte, Kant, leaves us without criterion of false and true. If all that exists for us is but a representation and there is nothing represented, then all is but appearance, and we have the doctrine of the false raised to the absolute. (What, however, if all is but presentation? '*Re*presentation' is the wrong word.) As Hume and Berkeley showed, illusion does enter into our experience, but it is only relative. Kant's error lay in his fundamental supposition that our representations represent nothing. It is the doctrine, more elaborated, of Protagoras over again.] **G. Lechalas.** 'La courbure et la distance en géométrie générale.' Études Critiques, &c.

PHILOSOPHISCHE STUDIEN. Bd. XII., Heft 1. **W. Wundt.** 'Ueber die Definition der Psychologie.' [Value of and reasons for the prefixing of a definition to the discussion of a science. The subject-matter of psychology and of the natural sciences. The two definitions: (1) psychology investigates experiences in their dependency upon the corporeal individual (Külpe and Münsterberg); (2) psychology deals with experience not mediately, as natural science does,—abstracting from the subject,—but in its immediate reality. It takes account of the interrelations of the subjective and objective factors of immediate experience, of the origination of the separate contents of this latter, and of their connection (the author, in the *Phys. Psych.*, *Logik* and *System*). The first definition makes psychology a department (*Anwendungsgebiet*) of physiology; the second coordinates it with natural science. The test of correctness is found in the application of the rival definitions to three principles: that of psychophysical parallelism, that of actuality, and that of voluntarism.] **A. Thiéry.** 'Ueber geometrisch-optische Täuschungen (Schluss).' [Illusions of dissimilar figures, cut by parallel transversals; illusions of magnitude in determinate distances without reference to transversals; the general conditions of illusion in estimations of magnitude. Conclusion: the primary condition of the illusions is the perspective projection of the figures. This is not to be understood, however, as a separate idea: the idea of dimension is built up from the projection distance, the visual angle, etc., as an assimilation or simultaneous association. Perspective projection is a constituent in the dimension idea, not itself an idea which introspection reveals as the cause of the illusions. The Editor remarks that, in his own opinion, the perspective projection is to be regarded as largely due to eye position, eye movement, etc.]

ZEITSCHR. F. PSYCH. U. PHYSIOL. D. SINNESORG. Bd. X., Heft 3 and 4. **E. W. Scripture.** 'Untersuchungen über die geistige Entwicklung der Schulkinder.' [Results of nine tests. Mental capacity increases from 6 to 17, at first quickly and then more slowly. There is usually a sudden change between 13 and 15.] **R. Hennig.** 'Entstehung und Bedeutung der Synopsien.' [Chromatic (physiological and psychological photisms) and diagrammatic synopsies. Record of cases. Mnemotechnic value of synæsthesia.] **A. Höfler.** 'Zur Analyse der Vorstellungen von Abstand und Richtung.' [Psychological analysis of these ideas, in the sense of the author's *Logik*, apropos of the question why the problems of squaring the circle, trisecting an angle, etc., are hedged about by conditions which render them insoluble.] **W. A. Nagel.** 'Ueber die Wirkung des chlorsauren Kali auf den Geschmackssinn.' [Water taken into the mouth after potassium chlorate tastes sweetish. The effect is not one of contrast but of temporarily changed disposition.] **R. Hilbert.** 'Ueber das Irisieren sehr grob ornamentierter Flächen bei gleichzeitigen Auftreten von Simultankontrast.' [Explanation

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of the iridescence of a wooden garden paling, under certain conditions of illumination, movement, etc.] Litteraturbericht. **F. Schumann.** 'Eine Erwiderung.'

Heft 5 and 6. **G. E. Müller.** 'Zur Psychophysik der Gesichtsempfindungen (II.).' [Comparison of the theory of antagonistic valences and of the component theory of the white process. The latter does not cover the fact that the subjective likeness of two lights is independent of visual fatigue, or the fact of the persistence of the white process in total colour blindness; the former is borne out by the existence of negative after-images, and by the fact that with impairment of red (or yellow) excitability goes that of green (or blue), and *vice versa*.—Antagonistic retinal processes regarded as opposed chemical reactions. The state of rest (psychophysical difference between the coloured and the colourless) and the effects of light stimulation (positive and negative after-images). Cooperation of nutritive processes. Processes of retinal adaptation. Talbot's law. Constancy of the optical valences. General biological considerations.] **R. Dodge.** 'Beschreibung eines neuen Chronographen.' **F. C. Müller-Lyer.** 'Ueber Kontrast und Konfluxion, II.' [Critique of Heymans.] **W. A. Nagel.** 'Ueber J. von Uexkülls vergleichend-sinnesphysiologische Untersuchung No. 1.' [Reply to criticism.] Litteraturbericht.

Bd. XL, Heft 1. **L. W. Stern.** 'Die Wahrnehmung von Tonveränderungen (I.).' [Increase of discriminative capacity, within certain time limits, with decrease of the rapidity of change. New apparatus.] **G. Heymans.** 'Aesthetische Untersuchungen in Anschluss an die Lipps'sche Theorie des Komischen (I.).' [The surplus of mental energy may be produced by other causes than those recognised by Lipps, and the general theory turned to account for the psychology of the beautiful.] **E. Aschkinass.** 'Spektrobolometrische Untersuchungen über die Durchlässigkeit der Augenmedien für rothe und ultrarothe Strahlen.' [The invisibility of the ultra-red, as of the ultra-violet rays, is due to retinal insensitivity, not to absorption.] Litteraturbericht.

VIERTELJAHRSSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE. XX. Jahrgang, Heft 1. **Fr. Carstanjen.** 'Entwicklungsfaktoren der niederländischen Frührenaissance. Ein Versuch zur Psychologie des künstlerischen Schaffens (Erster Artikel).' [Rejects the purely sociological method. The final explanation must be stated in bio-psychological terms. We must also avoid reading into earlier stages of a process of development what we know of its results. At the beginning of every artistic development there is a vague feeling of discontent, leading to an equally vague striving after novelty, which at first takes a tentative form. Finally this vague craving and groping finds definite means of satisfying itself, and the revolution is completed. This general point of view is applied in an interesting manner to the details of the case especially discussed by the writer.] **H. Cornelius.** 'Das Gesetz der Uebung.' [Explains the law of habit as a necessary consequence of the unity of our experience.] **R. Willy.** 'Der Empiriokritizismus als einzig wissenschaftlicher Standpunkt (Erster Artikel).' [A critical comparison of what the writer takes to be the metaphysical view, with that of Avenarius. Among other points it is urged that because all individual experience is in time, there can be no existence which is not perishable; therefore all talk of absoluteness, infinity etc. is nonsense. The writer appears to confuse the psychological standpoint with the scientific and with that of philosophy. It involves no contradiction to suppose that our experience should be a perpetual transition in time, and yet that it should be wholly occupied with timeless objects. So it involves no contradiction to affirm that objects are only known as presented to

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individual experience, and at the same time to affirm that by their very nature as we know them, they cannot be merely individual experiences.] Anzeigen &c.

PHILOSOPHISCHES JAHRBUCH. Bd. IX., Heft 1. **C. Gutberlet.** 'Ist die Seele Thätigkeit oder Substanz? (I.)' [This is the first of two articles on the question whether the soul is an activity or a substance. It is a controversy with Dr Rehmke, who considers the soul to be mere conscious activity, and accuses the theory of substantiality of being a form of Materialism.] **B. Paqué.** 'Zur Lehre von Gefühl (I.).' [The writer begins a series of articles by a historical account of the psychological theories of sensation, and gives an analysis of feeling from various points of view: its quality, its intensity, etc.] **L. Schütz.** 'Der Hypnotismus (I.).' [In this paper, which is also the first of a series, the phenomena of hypnosis are given in detail, after an account of its nature and the different means by which it may be produced; the phenomena of post-hypnotic suggestion are also touched upon.] **Dr Uebinger.** 'Die mathematischen Schriften des Nik. Cusanus (III.).' [The writer continues to analyse the efforts of Nicolas of Cusa to effect the quadrature of the circle; also his work *De arithmeticis complementis.*]

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. Band II., Heft 2. **J. Bergmann.** 'Der Begriff des Daseins und das Ich-Bewusstsein.' [Existence does not merely mean independence of the subjective process by which it is apprehended. A thing does not exist because we must adjust our thoughts to it; on the contrary, we must adjust our thoughts to it because we assume it to exist. Nor is the concept of existence introduced into the notion of a thing by the judgment in which we affirm its existence. To think of a thing at all is to think of its existence. It does not follow from this that the affirmation of existence is an analytical proposition. This is only so when the specific nature of the object appears as a special case of the general concept of existence, and is mentally realised as such by the thinker. This view does not justify the ontological argument as used by Anselm and Descartes. The article is an important and much-needed contribution to the subject of which it treats.] **M. J. Monrad.** 'Idee und Persönlichkeit.' [The Absolute Idea conceived as thought which produces its own content, and is thus at once self-distinguishing and self-identifying, is personality in its ideally perfect form.] **F. Staudinger.** 'Ueber einige Grundfragen der kantischen Philosophie.' [Identifies Kant's Thing-in-Itself with physical objects. Their existence *per se* is merely their distinctness from and independence of the subjective stream of consciousness. On this basis Kant's doctrine of freedom, in so far as it involves indeterminism, is rejected. The constitutive law of moral experience is the unifying of special ends, both individual and social, in a single harmonious system. Moral ideals vary from time to time, according to the nature of the empirical ends which require to be harmonised. The general law of moral experience is regarded as a psychological, or, at most, a sociological law.] **P. Natorp.** 'Ist das Sittengesetz ein Naturgesetz? Bemerkungen zum vorstehenden Aufsatz F. Staudingers.' [A reply to the previous article. The essential distinctness of the notions of *is* and *ought to be* is brought out with great force and clearness.] **L. Stein.** 'Die Wandlungsformen des Eigentumsbegriffs.' [Gradual relaxation of the rigour with which right of property is conceived, combines with extension of the range of objects to which it applies.] JAHRESBERICHT über die Erscheinungen auf dem Gebiete der systematischen Philosophie: (II) **V. Brochard.** 'Compte-rendu des ouvrages de Philosophie publiés en français pendant

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l'année 1894.' (III) **B. Bosanquet.** 'Systematic Philosophy in the United Kingdom in the year 1894.'

VOPROSI PHILOSOPHII I PSYCHOLOGII. November, 1895. **M. Korelin.** 'Lorenzo Valla's ethical tractate: *On Pleasure and True Happiness* (concluded).' [The author concludes that the value of the tractate consists in its uniting into one system and justifying the maxims of Boccacio's *Decameron* etc., and the greater part of the Humanists of the XVIth century.] **A. A. Kozloff.** 'The consciousness and the knowledge of God (concluded).' [This paper, dealing with St Anselm's ontological proof of God's existence, admits that the demonstration goes too far, but holds that a rational conception of the Deity may be drawn thence.] **N. Grot.** 'Principles of experimental psychology.' [Experimental psychology is only possible by the voluntary self-introspection of large numbers of individuals; such data may give excellent results.] **L. M. Lopatin.** 'The phenomena of conscious life.' [As phenomena imply substance in the physical world, so do they also in the mental sphere. This conception is metaphysical; but even phenomenists must deal in metaphysic.] **W. Solovieff.** 'The absolute principle of morality (to be concluded).' [Pity and shame, the principal moral emotions, are such only in connexion with a religious feeling which commands them.] **L. E. Obolenski.** 'An attempt at scientific reconciliation between various ethical opinions.' [There are two contrary tendencies which need to be reconciled: that in favour of morality, and that which contradicts it. The writer analyses these two currents of thought.] **W. A. Goltzeff.** 'In memory of Grotius.' [This is written for the 250th anniversary of Grotius' death.] **T. A. Zielenogorski.** 'Ivan G. Schad.' **M. A. B——cz.** 'An answer to Kozloff's criticism of *Master and Man*.'

January, 1896. **Johnston.** 'Extracts from the *Upanishad*.' **L. E. Obolenski.** 'The autonomy of man and its phases (to be continued).' [By the word 'autonomy' is meant the faculty of self-transformation. The author here deals only with the conditions which must precede it.] **Abbé S. N. Trubetski.** 'Principles of idealism.' [An attempt to set forth the positive results of rationalistic idealism in metaphysic.] **W. Solovieff.** 'The reality of the moral order.' [The real basis of the moral order is the universality of the spirit of Christ's teachings, which embrace all things.] **M. M. Kovalefski,** 'The development of the idea of political necessity in Italy.' [Bolero and Campanella, though both combating Machiavelli, arrive in reality at the same conclusions as he.] **A. Tokarski.** 'On Temperaments.' [There are two pure temperaments, the lively and the phlegmatic, (temperaments, in general, depending on the nervous system), and a third, mixed, resulting from them.]

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X.—NOTES AND NEWS.

PRELIMINARY ANNOUNCEMENT.

DICTIONARY OF PHILOSOPHY AND PSYCHOLOGY.

MACMILLAN & Co. have made arrangements for the issue in New York and London of a "Dictionary of Philosophy and Psychology" under the editorial supervision of Professor Baldwin of Princeton University. The work is to have the following general features:

1. It will contain concise definitions of all the terms in use in the whole range of philosophical study (philosophy, metaphysics, psychology, ethics, logic, &c.).

2. It will contain such historical matter under each term as may be necessary to justify the definition given and to show that the usage suggested is the outcome of the progress of philosophy, together with special historical articles.

3. It will have very full bibliographies both of philosophy generally and of the special topics which are connected with it.

With these features to give it character, and with the contributions of the leading men in this department of thought, chosen from England, America, and for the German and French usage, also, from Germany and France, to give it authority, it is hoped that it may come to be a standard work, and serve two main purposes as follows:

First, It should, if successfully carried out, render to philosophy, in a measure, the service of 'setting' the terminology in the different philosophical disciplines; and thus remove what is by common consent the greatest hindrance to their advance—*i.e.*, the varying and conflicting usages of terms which now prevail.

Such a book should serve both the teacher and the student in a most essential way. Teachers would have a consistent and, as far as the influence of the book might extend, uniform system of meanings with which to introduce these topics in the class room; and students would have the corresponding advantage of learning once for all an accepted terminology.

Second, It should serve as a general introduction to all the philosophical disciplines for all those who take interest in them.

Further, it is expected that men who are most competent in the several departments will contribute, and that in the result their work may present a fairly adequate statement of the present state of these studies in the world. All the matter in the Dictionary will be original and signed.

The following assignments of topics, with the names of the authorities who will contribute original matter, may be already announced:

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GENERAL PHILOSOPHY AND METAPHYSICS.

Prof. Andrew Seth,	Edinburgh	University.
Prof. John Dewey,	Chicago	„

HISTORY OF PHILOSOPHY.

Prof. Josiah Royce,	Harvard	„

LOGIC.

Prof. R. Adamson,	Glasgow	„

ETHICS.

Prof. W. R. Sorley,	Aberdeen	„

PSYCHOLOGY.

Prof. J. Mck. Cattell,	Columbia	„
G. F. Stout, W. E. Johnson,	Cambridge	„
Prof. E. B. Titchener,	Cornell	„
The Editor,	Princeton	„

MENTAL PATHOLOGY AND ANTHROPOLOGY.

Prof. Joseph Jastrow,	Wisconsin	„

BIOLOGY.

Prof. Lloyd Morgan,	University College, Bristol.

BIBLIOGRAPHY.

Dr Benjamin Rand,	Harvard University.

MACMILLAN & Co., 66 5th Ave., New York, and London.

NEW EDITION OF THE WORKS OF DESCARTES.

A complete edition of the works of Descartes will be published by the French Ministry of Public Instruction, under the auspices of the *Revue de Métaphysique et de Morale*, 5 rue de Mézières, Paris. Five volumes will be devoted to the correspondence, including letters addressed to Descartes as well as those written by him, and five volumes will be devoted to his published works. The publication will be begun this year and will be completed in 1900. A deduction of 40 per cent. in the price will be made to those who send subscriptions in advance to the above address.

We regret that we are compelled through want of space to postpone till our next issue a Reply by Professor Höffding to Professor Beare's Review of his work, *Geschichte der neueren Philosophie*, which appeared in the April number of *Mind*, and also a Reply by Professor Scripture to Professor Angell's Review of his work, *Thinking, Feeling, Doing*, which likewise appeared in the April *Mind*.

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MENTALLY DEFECTIVE CHILDREN.

At the last meeting of the London Branch of the British Association for Child Study, Dr Colman gave a short account of the various classes into which cases of marked mental defect are usually grouped, referring to the more characteristic features, such as the shape of the head, form of features, &c. He reminded the members that it was impossible to give any definition of what was mental defect; there was every gradation from the normal child to the complete idiot. The general mental characteristics of abnormal children were described one by one. The most noticeable are, awkwardness of attitude and clumsiness in performing any fine movements; irritability of temper, often alternating with impulsive affectionate demonstrations; slight abnormalities in various features and in the general expression of the face; general blunting of the senses, especially the sense of touch.

Special attention was drawn to the frequency with which many defective children, from an early age, exhibit a fondness for animals.

Dr Colman insisted strongly upon the necessity of care on the part of parents and teachers so that mental defects should be early detected. Any defects of the sense organs, such as abnormality of the eye requiring glasses, or deafness from enlarged tonsils or from growths at the back of the nose, prevent the early education of the mind, and attention to them is generally followed at once by improvement in mental condition. The lecturer pointed out that in cases of pronounced mental defect much good could be done (before the children reach an age at which they are received into special institutions) by firmness and mild discipline; by seeing that the children are not left alone but are constantly with watchful friends; and by using every means, such as their love of animals and their interest in objects around them, to draw out and improve their defective mental powers.

Cambridge: Printed at the University Press.

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NEW SERIES. No. 20.] [OCTOBER, 1896.

MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY.

I.—EVOLUTION AND PSYCHOLOGY IN ART.

BY DR COLLEY MARCH.

IT is not an altogether exhilarating employment to treat of Art, partly because opinion about it is in a state of flux, is not yet systematised; and partly because its terminology has been either undefined or else accompanied by definitions that have not always secured general assent.

Perhaps Professor Haddon was right in calling his work, to which reference was made in a recent number of this Journal, *Evolution in Art*. To have given it such a title as "the Evolution *of* Art" would have been to beg the question, Has Art been evolved, or has it grown by simple accretion? Evolution is not the same thing as growth. It may include increase of volume or of complexity, but it concerns quality as much as quantity, kind as much as degree, unlikeness as much as similarity.

The imago that has a shorter life, a smaller frame, and a less voracious appetite than the larva from which it sprang, may so greatly depart from its larval body in form and function as to possess other organs, to inhabit a different medium, and to be busied mainly with the new task of completing the cycle of its existence. And a chemical compound may vary in almost the whole range of its properties from those of any or all of its constituents added or averaged together.

Evolution as a term must include metamorphosis, changes that may appear to be even abrupt, and a capacity for flourishing in an absolutely new environment. And, if the current

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extension of the word may be allowed, if the paradox may pass, it includes involution, degradation, or degeneration. That is to say, the same forces that bring about the advance will, when they are withdrawn, weakened, exaggerated, or disturbed, induce the decline. Even growth may become extravagant, may o'erleap itself and fall on the other side.

Hence if the word evolution is to be applied to Art, it must embrace not only its origin and growth, but its transformation and decay. And then, what is Art? It is surely not enough to say with the Rev. St John Tyrwhitt (*Handb. Pict. Art*, p. 22) that "Art is the pursuit of beauty, nobleness, and truth in colour and form." To this I prefer my own definition, that Art is the methodic use of sensation to further Emotion, as Science is the methodic use of sensation to promote Thought. But for the present purpose it is better to take the etymological meaning given in Dr Murray's Dictionary: "Art is the application of *skill* to implements of utility, to subjects of taste such as poetry and dancing [though these will be excluded from consideration] and to works of imitation and design such as painting, sculpture and architecture." And we may regard the simplest kind of skill as that which results from primitive experimental actions, or even from automatic movements.

Art may be further divided into, 1. Artifice, 2. Artistic treatment, 3. Ornament, 4. Embellishment, and 5. Fine Art. But this is for convenience only; for we are dealing with a product of Mind, and it cannot be cut up into squares or marked off with a ruler. In every such division there will be marginal aberration and overlap.

1. Artifice is the work of an artificer whose intention and production are altogether utilitarian. It has certainly grown by accretion. One bit of experience, of ingenuity, of skill, stands, so to speak, on the shoulders of another; just as, with the material of his implements, flint was followed in succession by copper and bronze and steel; or as, in his architecture, clustered reeds or branches were followed by timber and stone and iron. On the other hand, we may take as metamorphic the abrupt change that occurred when work was first artificially done by forces that were not neuromuscular, not vital; by the windmill, the water-wheel, and the steam-engine.

2. Artistic treatment is the shaping or arrangement of the details, parts, colours, or outlines of implements or structures, whether utilitarian or not, so as to "please the eye," to excite agreeable feelings through the sense of sight. In such cases, as might be anticipated, the psychic state often has its origin in utility. For utility is always pleasing. Of all things that concern mankind it is the most important.

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That particular tapering, the *contractura*, of a column, or of the handle of a hammer, which most gratifies "taste" is probably not very different from that which is most functionally useful. The eye has always been accustomed to see outlines that represent the most functionally useful. They have ever been present to the observer in the structure of those animals that we chiefly admire for fleetness or strength, in the form of those stems that best carry aloft a crown of foliage. The lines of a yacht are called graceful. They have been reached by much experiment and they are functionally the most useful. But fish that swiftly cleave the waters have lines that are similar. The contour of the flint arrowhead whose shape we call beautiful, whose function was to outstrip the flight of birds, does not greatly differ from that of the frames of animals that swiftly cleave the air.

Indeed it would seem that the outlines which the muscularity of the eye follows with delight as being those of least fatigue, closely resemble the outlines of least resistance for bodies that move through a resisting medium. An oar has to offer the highest resistance in one direction and the least in others. The form of the paddle of the Southsea Islander is the result of Artistic treatment, arrived at, we may suppose, without any special intention of utility; but the pleasing and the useful, true Artistic treatment and strict utilitarian workmanship, coincide.

The aim of an architect is of course fundamentally utilitarian, but Artistic treatment may sometimes govern the position of his tower or the pitch of his roof. In matters of this kind his performances will depend in great measure on the sense of beauty, or in other words on the "taste," of those persons by whom he is employed or has been educated. For beauty is the correlative of taste, and taste can be expressed only by active choice whether in form or in colour; whilst choice varies in accordance with what the individual or the race has been most familiar with, and this has been largely determined by proved and admitted utility.

The tower was at first erected as a place of outlook or of defence, and the roof was originally a wooden protection either from snow and rain on the one hand or from light and heat on the other. It is evident that in the shape and arrangement of these structures degradation may easily take place when Artistic treatment follows a taste that is deprived of the action of utilitarian forces. When towers are no longer needed for security or outlook, and roofs are built of other material by new methods, Architecture, in a transition state, is apt to create the unmeaning and ugly.

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With what colours is an object endowed by Artistic treatment? Apart from the limitations of the palette, apart from newly invented pigments that give only the pleasure of surprise, those are used that in any stage of culture are most refreshing to the sense of sight. If we look intently at a green figure and then cast the eyes on a neutral surface, we see the same figure in red. To men who behold only the green of Nature, a red spectrum is always potentially present. Their retina needs this complementary colour as a refreshment, and the primitive artist, in his fondness for red, employed it in unconscious obedience to a physiological law. A complex culture demands delicate and varied tones.

It is well to give an example of the occurrence of metamorphosis under the influence of Artistic treatment; and an excellent one may be culled from Professor Haddon's work. It appears that in Torres Straits the betrothal equipment of a girl consisted for the most part in objects of utility for her married life, namely, articles of clothing, together with fishhooks and other implements made of tortoise-shell. Among the latter were some curious things called *sabagorar*. When a series of them is properly collated, it is found that they have been evolved from ordinary fishhooks.

It was natural that portions of the girl's dowry should be made especially attractive, and accordingly some of her fishhooks were bound, as regards the orderly turns of the ligature, with unusual care. Thus began a separation between functionally perfect fishhooks and those that were avowedly intended only for display. The pursuit of utility once abandoned, its controlling limitation was lost, and the changes wrought by Artistic treatment progressed apace. Love of symmetry soon reduplicated the curved part. A single shaft bore two hooks back to back, and these, no longer required for use, were first greatly bent in towards each other, so as to be out of the way, and finally joined together and fused with the stem, like the handles of a closed pair of scissors. In the end a transformation was accomplished so complete that the *sabagorar* possessed neither the function of a fishhook nor, in the least degree, a resemblance to one. Still there was no *saltus*. Art no more than Nature proceeds by leaps and bounds. Continuity was maintained though metamorphosis was reached. A hooked and cruel weapon had been changed into a hookless and harmless Embellishment.

But here let it be noticed that the turns of the ligature, or rather their visual equivalent, that originally bound the hook to the fishing-line can still be plainly discerned, although it is true that under Artistic treatment and free from utilitarian

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control they, in common with the *sabagorar*, have been greatly modified. They have become Ornament and are perpetuated to satisfy "expectancy." Even *sabagorar* would not have "looked finished" without them.

3. Works of utility are necessary. Man is compelled to make things. We understand why, in the making, they should be artistically treated. It is not quite so obvious why they should become the subject of Ornament. Ornament is a decoration put together by the hand and applied as an accessory to other things, to some implement, utensil, or structure, which could exist quite well without it. Though Ornament is unlike Artistic treatment in this, that it is a concrete thing, the two resemble each other in their quality of absolute dependence. The principal properties of Ornament are symmetry, repetition, and "feeling." When ornamental details or *motifs* are analysed and their phylogeny successfully followed, they are found to be derived mainly from technical methods of construction in handicraft, but also from plant-forms and even from animals. If we are to speak, then, of zoomorph and phyllomorph, all the more must we employ some such term as skeuomorph. This word has been called barbarous and unnecessary. It is however a useful one, and the Greeks, who were not an altogether barbarous people, used σκεύη in a dozen compounds. This plural designated tackle, tools, vessels, equipment, dress; and it would be difficult to find another word that connotes as much, and yet no more than is wanted.

How is it that Ornament has become so greatly desired as to be almost necessary? Why is repetition one of its essential properties? And whence comes the "feeling" that it possesses?

Repetition presents itself in two aspects, in symmetry and in series. Symmetry consists of two similar parts which are mutually obversed, and is therefore only a method of repetition. Such parts, contrasted as right and left, have never been absent from human consciousness. All ordinary animal and vegetal organisms are, roughly speaking, symmetrical. Moreover symmetry has an obvious convenience in manufactures; it is called for by the law of gravity; it is absolutely necessary in architecture, in roof and arcade. Thus Contiguity and Similarity combine to make symmetry a thing to be desired.

But likeness suggests unlikeness, and it has often happened, among artistic peoples, that asymmetry has found admirers. Change is refreshing, and variety can occasion a surprise that, within limits, is agreeable. Still, sooner or later, the fundamental expectancy reasserts itself, and the supremacy of symmetry is restored.

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Serial repetition is a necessity of manufacture. To fasten a flint flake to a handle of horn was probably one of man's earliest achievements. Wattlework and basketry came next, and the stitching together of skins for clothing. Then followed matmaking, plaiting and weaving. In these artifices, the coils of the ligature, the returning stitch, the intervals that separated the osier-rods, the convolutions of the fillet, the interlacing of branches or rushes or threads, on which all hands were employed and all eyes were bent, comprised serial repetition of the most rigorous and regular kind. Hand and eye working together grew accustomed to certain geometric successions of lines and scrolls, of squares and frets. But these things did not constitute Ornament, for they were essential and not accessory to the structure; they were technical requirements; their visual equivalent was not yet bestowed on something else. Artistic treatment, however, could already operate by making the outlines of the basket "graceful" and, to give the pleasure of surprise, by changing the precise order of the regular repetitions of texture.

But when the mind, long accustomed to certain appearances of serial repetition, began to look for them on other things and felt a sense of loss in their absence; when their visual equivalent, such as cross-hatching, was cut on a comb, or when chevrons were scratched on a bone needle, transfer, metamorphosis, was accomplished and Ornament was born.

At some time, in most cases but not in all, between the advent of basketry and that of textiles, pottery came in. The earthen bowl was suggested by the wicker basket, and special baskets were made to receive the coating, or lining, of clay. Where gourds were accessible, pottery moulded itself upon them. But the early European vase, whether or not it had a round or pointed, or a flat base, was ornamented. Hand-made and imperfectly baked vessels had to be supported in a network of fibre, and they were enwound, chiefly at the neck and shoulder, by thongs or cords. As the manufacture perfected itself, these aids were discarded. But hand and eye were accustomed to them, expectancy required their visual equivalent, and ceramic ware was adorned by skeuomorphs of netting and binding. The vase is, in most cases, the lineal descendant of the basket, and a special scroll or coil was the structural method of finishing or bordering basketry. Hence in early art as well as in that of to-day, scrolls and coils whether painted or incised are found as a decoration, especially on the vase's neck, shoulder and foot. And when buildings came to be constructed no longer of timber but of stone, the artifices that were functional in wood-work—panel, beam-ends,

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roof-tree—reappeared as functionless accessories in the new architecture. They reappeared at the bidding of expectancy, which thus selected the skeuomorph and originated Ornament.

Are further examples required? The readiest answer is, *Circumspice!* Let us glance round the room in which we are sitting. We probably see no shape that suggests an animal origin except the legs of a table, which happen to be terminated by brass claws. This, though closely verging on Ornament, is really a case of Artistic treatment. Legs must end in something, and claws are a natural termination. The wall-paper and the carpet are decorated with floral patterns. But it should be noticed that these are provided with a formal and well-marked border, and that, regularly repeating themselves, they appear to rest on some larger or smaller reticulations, to stretch themselves out, as it were, on an invisible understructure, even as, in old Cornish sculptures, the Crucified One is extended on a cross that is "understood." Perhaps, too, foliations adorn a bracket of wood or bronze.

All the remainder of the Ornament with which the room is furnished is skeuomorphic. The handles of the fire-irons have a twisted design upon them that suggests thong work or filigree. The window-blind, though an ordinary piece of cloth, hemmed along the lower edge, is endowed with a row of tassels. The marble mantel as well as the wooden dado displays a multitude of small panels. The iron-work of the stove is enriched by fluted pilasters. The table, desk, and cabinet are bordered with mouldings that are doubled and quadrupled by repetition. The top of the bookcase bears aloft a Greek gable, and the cornice that runs round the ceiling is partly composed of a row of diminutive dentils.

It is needless to elaborate proof that each of these instances of Ornament sprang from structural handicraft and became rooted in the mind by association of contiguity, and that thus an expectancy was raised for them of such urgency that transfer took place as occasion offered.

The splicing of the handle to the implement originated the skeuomorph of binding which we see on the fire-irons. It is the oldest and most widely spread of all Ornament. It is found on pre-historic tools of bone and bronze; and it can be recognised in the torus that emphasises the corners of the buildings of ancient Egypt, carrying us back beyond constructions of stone and timber, to the days when houses were built of reeds.

The tasselled fringe was the best and easiest way of securing the borders of loosely woven textures, and was much affected in Assyria. Indeed, the structural necessity of making

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pieces of handiwork safe by means of a specially contrived rim or edge occasioned an expectancy so masterful that nothing "looked finished" without one; and a frame like that which constitutes a panel can be used as Ornament even by itself, whilst, in multiples, it forms a favourite *motif* in Grecian and Gothic architecture, and, in complexity of setting, adds to the wonderful charm of Saracenic carpentry.

The dentils of the cornice indicate the beam-ends of the timbered houses of pre-historic times, and the gable represents the supports of the roof-tree. The skeuomorph of the gable is generally single; but in many cases, as on the west front of the church of St Maclou, at Rouen, it can multiply itself with magnificent effect.

It must not be supposed that, in the days when Ornament began, the artificer supplied an external demand, or followed an intuitive public taste. All men were artificers. Their impulse was internal; and this not less when industry was first divided, and handicrafts were kept in families, in castes and guilds.

"The sensations of sight," Dr Bain truly observes, "make more than any other thing, perhaps more than all other things put together, the materials of thought, memory and imagination. Vision is the most retentive of all the senses. Objects thought of on account of the other sensations they furnish are *conceived* under their visual aspect" (*Senses and Intellect*, 2nd Ed. p. 361). "Touches are associated with sight, connecting the tactile properties of things with their visible appearance, whereby the one can instantly suggest the other" (*Ibid.* p. 368). "The tendency of an idea of the mind to become the reality is one of the controlling forces of our constitution; it is a distinct source of active impulses" (*Ibid.* p. 348).

Mr Spencer, in his own terminology, supports the same view. "Other things being equal, the revivability of a feeling varies with its strength, and varies also with the number of times it has been repeated in experience" (*Psychology*, I. 233). "The most highly relational feelings are the visual, and these are of all feelings, the most easily reproduced in thought" (*Ibid.* I. 129). "Revivability varies as associability" (*Ibid.* I. 250).

It was inevitable, therefore, that in this regard there should be formed in the brain a psycho-neural *syntaxis* or "disposition," easily susceptible of excitement. It was inevitable that there should arise in the mind an "expectancy" of the visual equivalents of certain technical devices in the matter of joints, angles, borders, rims and edges, even when the things made came to be constructed in other ways and of new material.

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Skeuomorphs, then, though they sprang from structural needs, have lost all function and exist only to satisfy the mind. Loosed from the trammels of utility, it became possible to transfer them to fresh and often incongruous fields. Thus, the visual equivalent of "binding," which is not indeed a ligature at all but has come to supply the place of it in a psycho-neural syntaxis, may be seen on a shaft of marble, and dentils, or their lotiform representatives, may leave the cornice to adorn the vessels of the potter. Moreover, detached from function, skeuomorphs themselves were the more easily affected by Artistic treatment, whereby metamorphosis was greatly accelerated. Expectancy, too, strengthened by its food, grew more exacting, and constrained Ornament to creep over the whole of nearly every surface, often by an extension of its outlying elements; and so the "filling in" tendency of decoration was developed. Everywhere, bareness became abhorrent.

The earlier, simpler skeuomorphs are naturally the most durable and the most widely distributed. They never fail to give pleasure when suitably employed, and they have exerted a strangely transforming influence on Ornament otherwise derived.

"Epiperipheral feelings," says Mr Spencer (*op. cit.* p. 251), "which occur together or in succession become linked in such a way that the vivid or the faint form of one arouses the faint forms of the rest." We see a familiar face and "along with the recognition there arises the consciousness of a redness on the cheek that was before present, but is now absent. This colour was a term to various relations of difference involved in the consciousness. Hence, when these are again presented, the assimilation of them to the like relations before seen, *entails a consciousness of the missing term*" (*Ibid.* p. 269).

Further, Mr Stout, speaking of complex perception, observes (*Analytic Psych.* II. 20) that "if one part of the complex whole be given, we have such a prenotion or schematic anticipation of the remainder as enables us to mentally inquire for it." And he remarks (p. 126) that "both in scientific and in ordinary observation there is always ideal anticipation, side by side with the actual series of perception."

Expectancy is a case under the Law of Similarity. It is a demand for familiar Sequences, for familiar Coexistences, even for familiar Differences; and if the craving is not satisfied, the result is an acute sense of loss.

A good example of expectancy in sequences is afforded by Professor Sully's account of the little girl's grief when her grandmother did not correctly repeat her favourite story. The *Vestslevigs Tidende* gives a better one: "In a church on one of

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the Danish islands, it was the custom of the men, on walking up to the altar and coming back again, to bow at a certain spot to the women sitting on one side of the aisle. No one could tell why. Last year [1895] it so happened that a layer of plaster was removed from the wall on the women's side, and a picture of the Virgin Mary was brought to light, which had evidently been the original cause of that reverential custom—a custom which had been continued for a period of four hundred years, long after its significance had been forgotten." Here, the function had vanished, there was no Virgin and no adoration; there was expectancy in sequences; the men would have felt uncomfortable had they not bowed at a particular point of their promenade through the church.

How powerfully expectancy can exert itself towards coexistences can be seen in the severe and sometimes fatal nostalgia that afflicts the Switzer who is exiled. An expectancy of differences, of that utmost difference which we call contrariety, seems to explain the desire for asymmetry. It may account for the proverb, "Pride goeth before a fall," since experience cannot do so. It may be a reason for the extraordinary hope which often buoys up those whose affairs are desperate, that the worst has come and fortune is about to smile. And it may help us to understand how the possession of wealth, especially when riches are suddenly acquired, sometimes excites the idea of impending poverty, leading to penurious habits, that is, to poverty itself.

It is a present fashion to go to the Nile for examples of the phyllomorph. Professor Petrie justly observes, however, (*Egyp. Dec. Art*, p. 50) that "the geometrical forms of wavelines, and chequers copied from weaving, and the varieties of the spiral, were the first ornaments of importance in Egypt; while the actual forms of feathers and flowers were not generally imitated till a later time." Here, in a parenthesis, let it be noted that what may be called the feather skeuomorph, that is, Ornament derived from garments made of feathers cunningly fastened together, becomes at last a purely geometric device of chevrons and triangles.

Notwithstanding the late advent of the phyllomorph in Egypt, we see that vegetal forms were liberally represented in the wall-paintings, at Medum, of the IVth dynasty. Plate XII of Professor Petrie's monograph shows us a man sitting beside the papyrus and other fluvial plants; geese feeding on the herbage of the meadow; and (pl. XXIII) cattle browsing on the boughs of trees. The drawing is fairly realistic. But though signs of conventionalisation can be detected, no phyllomorph has yet appeared.

It is true that "the *khaker* ornament" which, in these

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paintings, decorates the tops of boat-cabins, was derived from stems and plumes of the papyrus. But, as these were structurally arranged, in order to form a screen, the pattern is properly a skeuomorph. It was destined to a great vogue, and in the XIIth dynasty had become the accepted if not the invariable adornment for the frieze of painted walls. In the same dynasty skeuomorphs covered the ceilings. At Beni Hasan and at El Bersheh the decoration is thus described: Across the centre of the ceiling runs the representation of a wooden beam coloured yellow, with brown graining. On either side of the beam the space is divided by thin black lines into small red and yellow squares containing quatrefoils [so called, but thought to be skeuomorphs of stitching] which are black in the red squares and blue in the yellow. This is continued to the walls; but in the centre is a large rectangular space of a different pattern, intersected by the "beam" and bordered by two white lines enclosing a narrow black band within which is a wavy white line. This space is divided transversely into three nearly equal compartments. In the central one is painted a cheque pattern of yellow and red. The remaining spaces are filled with imitation mat-work, plain yellow bands decussating with bands of brown-striped yellow, representing two kinds of reeds which run in alternating directions as regards the four compartments (*Arch. Survey of Egypt, Beni Hasan*, I. 29). Here, then, we have skeuomorphs of timbering, of stitching, of weaving and of matting—but no phyllomorph.

Meanwhile the constant presentment of the lotus as a national, a beloved, a sacred emblem, led by degrees to an overwhelming expectancy, and by the time the XVIIIth dynasty is reached the lotus has invaded almost all Ornament and has especially fastened upon the scroll. Indeed a cursory glance at Thebæan ceilings may discover nothing but this particular phyllomorph, although in its borders and regular decussations may be discerned an underlying and controlling skeuomorph; whilst the serial repetition thus imposed upon it brings it within the category and definition of true Ornament.

The parasitic vitality of the lotus, acquired by this profound expectancy, was so great that it adapted itself to every environment and changed its form to suit the many structures on which it flourished, whether they were the tassel, the dentil, or the fret; becoming the pendant or the erect anthemion, budding between the decussations of a spreading scroll, and following the intersections of a trellis. Nay, more. It engrafted itself on other plants, masking the papyrus and disguising the thistle; and under Artistic treatment assumed shapes so conventional, so distorted and metamorphic, that in other lands, as Mr

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Goodyear has brilliantly shown, its origin and meaning were obscured and forgotten, and its utter degradation was wrought at last. And though Egypt had other phyllomorphs, such as the papyrus-dado and the palm-capital, they survived with difficulty against the might and versatility of the lotus.

If it is comparatively easy for plant forms, by reason of their parasitic habit, to yield to the conditions of Ornament, to descend from the stage of Fine Art and realistic presentation, and to become subject to convention and repetition; it is quite otherwise with animal forms.

The carving or delineation of animals was a very early achievement. It was practised by the remote race of Cave-men, whose work asserts a preexistent skill in the use of tools invented for utilitarian purposes and employed in handicraft.

If little Ornament has hitherto been found that can be attributed to that people, it must be recollected that besides the imperfection of the record as regards a time so remote, and the inevitable loss of all perishable material, men who lived in caves and wore garments of skins, who made neither dwellings nor textures, whose only implements were connected with the chase, were largely destitute of the basis of Ornament, of most of those constructional devices that created the expectancy of serial repetition.

Their purpose in carving or delineating animal forms can only be surmised as not very different from that which actuates the modern "savage." In some cases it was a desire to convey information; in others it was a totemistic or genealogical expression of veneration or pride; and again in other cases it was an endeavour to influence events by a magic that required a presentment of those animals that were to be captured, avoided, or destroyed.

But any such image-making belongs to the province of Fine Art. How then is it to be transmuted into Ornament? The first step is the removal of the artist's attention from the realistic model, so that, for whatever reason, he is content to produce only a visual equivalent; and this, when the continuity of workers and observers is unbroken, may depart by degrees so widely from the original figure as to end in a veritable metamorphosis. The course is further determined by the size, shape and contour of the surface on which the work is imposed, by the material on which it is wrought, and by the tool that is employed. Whether the surface is extended or restricted; flat, angular, or round; of clay, bone, or wood; these things, together with the nature of the implement, whether it be a flint knife, for example, or a reed brush, influence the curves or strokes of the artist's product. And then, if other crafts have also made

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progress so that an imperious expectancy of repetition has arisen, a serial representation will be attempted, and all at once the animal presence enters the ornamental field and the zoomorph is born. Indeed almost any form, however ungainly, may when serially repeated become attractive. Thus, a contorted and repulsive figure of a bat is, solely by serial treatment, converted into charming Ornament by the Chinese (Balfour, *Evol. Dec. Art*, p. 50).

As the divergence from realism increases, as repetition becomes more rigorous, and as, with this multiplication of the individual figure, its abbreviation is brought about; when chains of bodies placed vertically or horizontally are fused into corresponding straight lines, and when adjacent limbs are conjoined into scrolls or zigzags; when these are hardly to be recognised as the visual equivalents of bodies, or arms, or legs; then they soon approach the outline of some dominant skeuomorph to which they are finally assimilated.

Such metamorphoses have been worked out by Dr Stolpe, of Stockholm (*Ymer*, the Journal of the Swedish Society of Anthropology and Geography, 1890, p. 193), and by Mr Read, of the British Museum. And it is such metamorphoses that justify Mr Holmes in affirming that "any animal form extensively used in decoration may give rise to any or all of the highly conventional types of ornament, even to such as the scroll, the fret, and the guilloche" (*Ann. Bureau of Ethn.* IV. 184).

An analogy may be found in language. A predominant word or tone tends to assimilate approximating sounds to itself. The familiar absorbs the less familiar vocable, when they have a sufficient degree of resemblance. In Somerset, Burgh Walter becomes Bridgewater.

As Mr Stout puts it (*op. cit.* I. 285): "Suppose the components of one combination are *a b c*, and of the other *a b x*; *c* may be so favoured from the outset that it simply displaces *x* without any feeling of discrepancy arising, and without any attention to the difference." This process he calls "coalescence."

Degradation is undergone when a zoomorph, having ceased to be the visual equivalent of a realistic original, and having at the same time never been subjected to serial repetition so as to have become assimilated to any prevalent structure-form, breaks up into a medley of *membra disjecta*. But the passage of a zoomorph into a skeuomorph is not degradation; it is a completion of a normal metamorphosis in the evolution of Ornament.

And here the interesting fact should not escape notice that things as unlikely to be transmuted into Ornament as are

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amulets and magical documents, tend to serial and geometric development. Such a device, one against a skin-disease, is given in Professor Haddon's work (pp. 243, 240). To an inexpert observer it already seems far more decorative than "pictographic."

A recent reviewer, himself an archæologist, declares that the chief defect of Professor Haddon's work is that "he wholly ignores the geometric origin of pattern-making." The objector is evidently one of those who believe that primitive man, having made a wooden comb, sat down before it in despair until he had invented some design with which it might be adorned; and that the first things that presented themselves to his introspection usually bore a geometric form. Circles or spirals, triangles or squares welled up in his mind, and satisfied his innate craving. The reviewer and his friends, when the matter is pushed against them, cannot avoid the affirmation, may indeed be proud of it, that such a desire to decorate a useful surface must have been intuitive and aboriginal.

But the truth is Professor Haddon does not ignore the geometric origin of pattern-making; he denies it. He rightly declares (p. 309) that "savages do not deliberately invent patterns or designs, for artistic expression is the result of a pre-existing visual impression." "The contrary assumption is no longer permissible" (p. 164). And Professor Goodyear considers that "geometric patterns made for purely decorative purposes are absolutely foreign to the nature of primitive and prehistoric man" (*American Architectural Record*, IV. 88).

Of circles or concentric rings, perhaps the most easily made of these patterns, "no examples are known in Egyptian decoration before the XVIIIth dynasty and but few then" (Petrie, *Egypt. Dec. Art*, p. 47). Spirals preceded them, and spirals, wherever they underwent debasement, degraded into them. But the reverse process never occurred, circles never opened into scrolls (Montelius, Haddon, Goodyear).

Are spirals and scrolls, then, claimed as aboriginal Ornament? Is it denied that they sprang from structure-forms, such as those of wicker-work or basketry? Is appeal made to scarabs? To scarabs let us go.

Professor Petrie's *Historical Scarabs* contains drawings of 2,220 of them, arranged in chronological order. It is on the base of scarabs of the Vth dynasty that the scroll makes *for us* its first appearance in Egypt. It requires some hardihood to assert that it originated all at once either then, or on those signs and seals; or, if it be regarded as a skeuomorph, that its first transfer was to such a narrow and difficult field. What, however, was its significance there? To the eye of a race that

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had received a long and patient training in structure this inscribed base looked bare and unfinished unless it was encircled by a border, and a border in the form of a well-marked line was hardly ever omitted. Indeed, it was sometimes doubled (*op. cit.* figs. 394, 464). But frequently the margin was emphasised by a "rope pattern," a skeuomorph of binding; and still oftener by a "scroll pattern." On sheet 13 are represented 21 inscribed scarabs, and of these 6 are bordered by a single line, 1 by a double line, 10 by a rope, 1 by a rope inside a single line, 1 by a scroll within a rope, and 4 by a scroll within a single line, though in one of these instances the single line disappears in places where there is no room for it.

It is sufficiently clear that the line, the rope, and the scroll are marginal equivalents; and, until the contrary is proved, it is fair to assume that they were derived from processes in which borders were functional, from structures which required, for marginal security, stronger turns of the fibre, of the rope, of the withy band. And be it remembered that the early Egyptians were great basket makers, and that their ancestors of the land of Punt constructed houses of wicker-work.

On the oldest scarab that can be certainly dated, one of Assa, of the Vth dynasty (Petrie, *Hist. Scarabs*, fig. 48, *Egypt. Dec. Art*, p. 18), the border consists of a single line within which is a discontinuous scroll so arranged as to give the needed space to the contained inscription. Scrolls are inherently a spreading decoration, difficult to cut on hard material; and where it was necessary to make room for more important matter the curved line thins out or disappears.

A great development of the scroll took place at the "obscure town of Kahun" (Petrie, *Kahun, Gurob, and Hawara*, p. 29) where foreign workmen were employed. It seems most likely, says Professor Petrie (*Ibid.* p. 44), that during the war of Sankhkara, the last king of the XIth dynasty, with the Hanebu or "lords of the north," who were the Ægean peoples, the Egyptians became acquainted with the Mediterranean races. It is certain that in the XIIth dynasty foreigners were employed in public and domestic works, and that commercial intercourse was maintained across the sea. Indeed, similar scarabs of the same period have been found in Crete. The style of the pottery discovered at Kahun gives proof of exotic influence, the potter's marks are foreign, the blue marble came from abroad, and of all the weights that have been found not one is pure Egyptian. Egypt has profoundly modified the Art of the world; but not less true it is that a reflex current has flowed to the Nile. "Some of the metals were known in Europe before they were used in Egypt; and bronze tools of the best form were made in

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Italy two or three centuries before Egypt possessed them." (Petrie, *Ten Years' Diggings*, p. 153.) Eastern Europe, from the Ægean to the Baltic, that from remote ages traded in Scandinavian amber, in the tin of Hungary and in the jade of Eastern Turkestan, had a civilisation of her own.

These captive or immigrant artificers of Kahun in the XIIth dynasty, seem to have been fond of the scroll; and, ignorant perhaps of the meaning of the inscriptions they cut, or lacking skill to inscribe them, or making the scarab only for export, they sometimes covered its base with nothing but the wandering curves with which they were more familiar. We see, too (*Illahun, Kahun and Gurob*, Pl. x. fig. 159), the scroll undergoing that curious triskeloid treatment that was probably borrowed from filigree, that pervaded the metal-work of Eastern Europe in her bronze age, and that was destined to develop into characteristic patterns under Celtic culture.

Elsewhere and afterwards Egyptian Art limited the scroll to its Egyptian type, until the lotus began to bud between its convolutions. When the culminating beauty of this combination was reached, in the XVIIIth dynasty, it bore transplantation to Europe and established itself in the Ornament of Mycenæ. But before this time, before the lotus had acquired its parasitic energy, where, as on early Cypriote vases, this alien phyllomorph violently entered the ornamental field, it was broken to pieces. Pre-existing skeuomorphs, that could not be eliminated from expectancy, defaced it. The confluence of art streams produced, not a reinforcement, not a flowing tide, but a destructive cross sea; and ceramic decoration in that part of the Mediterranean was for long a hideous jumble. The Cypriot had never seen a lotus, its highly conventionalised forms were not visual equivalents for him, and in his perpetual copying of copies, the *motif* sank to the lowest degradation.

What conditions can we discover that are favourable to the evolution of Ornament, that raise it in beauty and dignity? (1) Certainly there must be leisure, the time for contemplation, receptivity and productiveness that itself implies a racial superiority, that itself is proof of a better ability to get and keep comfort and security. (2) There must also be a well developed faculty of attention, which is that act by which a particular sensation or ideation is prolonged as far as volition can prolong it, and disturbing sensations or ideations are excluded as far as volition can exclude them; whereby the power of retention and the facility of coalescence are augmented. (3) No doubt artists are moved or stimulated by competition in supplying a demand which expresses "taste," and in satisfying a thirst for the novelty and variety that give the transient pleasure of surprise. They

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are often tempted to pander to the "vagaries of fashion" which soon die away, and then the art reverts to its normal course. Still, variety even so originated, is exposed to a "selective" operation, which to some "sports" may give a long or a permanent life. (4) Enrichment often comes from what Professor Haddon calls "cross fertilisation," a confluence of art-streams that strengthen each other, a duplex concurrent expectancy that produces a resultant greater than either component.

But, above all, there must be (5) progress in other crafts besides that one which especially engages the artificer. It was Mr Holmes who first pointed out that "the character of ornamentation depends less on the age of the art than upon the acquirements of the race in other arts."

"A feeling," says Mr Spencer (*op. cit.* p. 256), "cannot form an element of Mind at all, save on condition of being associated with predecessors more or less the same in nature." "Every relation, then (p. 267), like every feeling, on being presented to consciousness, associates itself with like predecessors. Knowing a relation, as well as knowing a feeling, is the assimilation of it to its past kindred. But since within each great class the relations pass one into another insensibly, there is always, in consequence of the imperfection of our perceptions, a certain range within which the classing is doubtful—*a certain cluster of relations nearly like the one perceived, which become nascent in consciousness in the act of assimilation.*"

This nascence in the act of assimilation is, in reality, a fusion of percepts. The artist looks at a flower, a lotus, and carries about with him its idea. When he sees the same lotus again it is never in precisely the same state or aspect. When he sees other lotuses they are never exactly like the first lotus. Hence the percept becomes a concept.

It is a common but a vague thing to say that successive presentations of an object are attached by the association of similarity. It is better to suppose that they fall upon the same portion of cerebral substance, that they affect the same pyschoneural syntaxis. As Mr Spencer expresses it (p. 258), "The instant automatic aggregation of each peripheral feeling with those of its own order, answers physically to the localisation of the nervous excitement causing it, within that subdivision of vesicular structure which is the seat of other feelings of its order."

But successive presentations of the same lotus in states and aspects that necessarily vary, or of a number of other lotuses, could not produce a percept of some particular lotus, nor a concept of that flower in general, unless these ideas became blended or fused, unless the cerebral matter which forms the

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physical basis of an idea, unless the psycho-neural syntaxis, underwent such a molecular and organic change that it could answer for various aspects of a single flower, or "substantiate" the concept of a genus.

We are too apt to forget the feebleness of the recollected thing, the idea, compared with the actual sensation. Let us look from the window and fix our gaze on the landscape—the field, the farm, the hill. Now, close the eyes and reproduce the scene with the utmost possible distinctness; and, then, again look forth and, on the instant, compare the two feelings, the sensation and the reproduction, and estimate the differential vividness. How faint and phantasmal are the symbols with which mind works its marvels.

Ideas have to be repeated and strengthened by corresponding sensations, or recollections will undergo an increasing change, the actual pass into the fanciful, the realistic into the conventional. We have all been struck with dismay on finding, now and then, a great want of similitude between the reality and our remembrance of it, when some place or person, long unseen, is visited again.

Molecular changes in the cerebral cells, occasioned by physiological action, are incessant and, inasmuch as no subsequent restoration can be thoroughly exact, must bring about some modification, however slight, of any given percept. We see a particular horse, let us suppose, but once in our life, which produces the percept A. A few hours afterwards we recall this horse to our mind, and this reproduction is α. At the end of a year the horse is again recalled, and this revival is β. If there have been no reinstatement between that of α and that of β, there has continued, nevertheless, the ordinary somatic flux of molecular change; whilst, if there have been frequent reproductions, there has been a still greater molecular disintegration by functioning, with a repair never absolutely perfect.

In addition, many horses like our recollection of the particular one have been seen and remembered, and of all these percepts, more or less similar, some degree of blending has taken place. So that β is by no means equal to α, but may be better than α, or worse.

An artist no longer having an actual mat or flower or animal before him, no longer desiring to imitate it, no longer striving to be realistic but only effective, draws from his ever-changing mental store. His idea may advance in importance or beauty if associated with similar percepts more pleasing than itself, or if, as often happens, the resultant of a fusional process is more agreeable than its components.

Unrecalled to realism, his ideation is influenced by those

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forms and lines "nearly like the one perceived that have become nascent in consciousness," by those in which "*a b x* has been absorbed by *a b c*," by those that have undergone, or may yet be undergoing, coalescence. Similar coils of basketry and filigree, similar angles of trellis and texture, similar curves of flowers and scrolls, the skeuomorph to which the abbreviated zoomorph is sufficiently approximating, the exotic which resembles the local decoration—these things become blended or fused. They are not mathematically averaged, but move in the direction taken by the artist's attention; for, "wherever attention is present," as Mr Stout remarks (*op. cit.* II. 118), "some kind or degree of systematic [syntaxic] readjustment is involved." And as they grow in his mind, as they re-arrange themselves in his brain, fresh combinations are formed of which he may become fully conscious only when his hand develops them in his work, and the productive outcome and advance are finally seen.

But this particular mental process, fusional ideation, cannot be very different from that which occurs in making inductions; though the latter seems able to rise into the sphere of consciousness, as in the familiar case of Newton's apple, or the skull found by Oken. Certain of their higher concepts, in ascending cerebral planes, were blended at the moment their mind was regarding them, were resolved by a process of apperception which Mr Stout follows Steinthal (*op. cit.* II. 110) in defining as "the union of two mental groups in so far as it gives rise to a cognition."

Decay in Ornament is, of course, the result of unsustained energy. Unsuccessful war has put an end to comfort and leisure; or, the early Artifice that generated the *motif* has passed from observation because it is no longer practised. There is a lack of attention, perhaps of the power of attention, or, the atmosphere of culture which the artist breathes has become stagnant, and the crafts that surround him, stimulated by no demand, wither. Either there has been no "cross fertilisation," or the hybrid it has borne is monstrous and sterile. Until at last the time has come when expectancy is satisfied on the one hand by a few empty chevrons and spirals, or on the other by an extravagance of design that is equally destitute of meaning.

Artistic treatment enhances for us the purely sensuous pleasures of colour and form. What is called "feeling" in Ornament is really a particular kind of emotion which is mainly due to the realisation of an expectancy in coexistences that are marked by symmetry and repetition, and to the gratification of a "taste" that has been created partly by accidental environ-

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ment and partly by deliberate education. "Any pleasing experience," as Mr Stout observes (*op. cit.* II. 305) "may give rise to an unsatisfied conation, when its conditions are only partially repeated; as when the corresponding idea is called up, and the external stimulus withheld." The craving, the conative energy, of any expectancy is to be measured, first by the pains that are taken to keep it continually satisfied, and next by the distress that follows any lack of satisfaction. Perhaps an illustration drawn from an acquired organic craving may be permitted. The man whose food is carefully sweetened may be unconscious of the full strength of an appetite that is thus habitually met, until some omission shows him the eagerness of his predilection. When the soldiers of Russia, who for months had lived on the most restricted fare as they vainly strove to force the Balkan passes, burst at last into the plains of Roumelia, their cry in every village was for sugar. And this condiment may find its 'gustatory equivalent' in honey, or even in salt.

But emotion produced by Ornament has further factors. Sometimes, as regards the skeuomorph, there is a subconsciousness of a utility in which it originated; and as regards the phyllomorph, of the charm of the flower from which it sprang. Sometimes, nearly always in skeuomorphs of timbering, there is the softening effect of diminutiveness. Sometimes the mind is delighted by an increased complexity, at others by a simplicity that has become severe; by a perfection of detail in textures and frets, or by the 'coming out right' of the entwisted fibre.

Ornament, that yields so readily to artistic treatment, can also be dealt with by Artifice, and can be made, not to revert to its primary utility, but to subserve a new one. An example occurs in that protruding string-course which is a skeuomorph of timbering. It is largely employed in Gothic architecture. Thus, it runs round all the exterior walls of Furness Abbey. On the entrance towers, the oldest portion of the building, it occurs as a prominent line of stone moulding, and it is nothing more. This is also the case on the walls that constitute the latest and debased part of the abbey. But elsewhere, the string-course is undercut or 'throated,' so as to shed rain and cause it to drop earthwards instead of streaming down the walls. The first builders did not think of thus utilising Ornament; and the last were not earnest enough to expend their labour upon a utility that met no one's eye.

4. Embellishment is finery, or that which "makes fine." All unconsciously, by physiological forces operating through sexual selection, many birds have acquired a highly attractive plumage. A conscious desire to excite admiration has led man-

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kind to the use of personal and individual decoration. Things worn by way of bedizenment, crystals for example, and shells, are sometimes called 'ornaments,' though in the sense of the word as here defined they are not Ornament but Embellishment. Jewels that shine on the harness of a horse; the feather fixed in the hair of a savage, or on the head of a modern barbarian; the labret, eardrop, armilla; rings on the fingers and bells on the toes; trinkets, coronets, baubles—such pieces of finery are deliberate, adventitious, and detachable; they are sexual, bellicose, proud, aggressive, or wanton. Nevertheless, they are sometimes elaborated by Artistic treatment. Sometimes they give origin to ornamental *motifs* by establishing an expectancy; sometimes they exhibit an illusory appearance of utility; and sometimes they assert an untenable claim to be regarded as examples of Fine Art.

5. The works of Fine Art can be sharply differentiated from Ornament. They have an altogether independent existence and are not subordinate to serial repetition. It is their aim and end to excite a high order of emotion, and therefore they are modelled upon nature and kept in touch with natural phenomena. They grow mostly by accretion in excellence and in complexity. Metamorphosis is not clearly apparent in them, but perhaps a near approach to it is found in the modern method of "blotting," on paper and on canvas, adopted by impressionists of the Vibristic school, whereby a realistic effect is produced by entirely dissimilar and unexampled means. Though the cleverness of the works of Fine Art excites, as cleverness does elsewhere, perennial admiration, they possess the further quality called "feeling" which is proportionate to their ability to arouse those emotions that are caused by Nature herself.

Emotions or "central feelings," says Mr Spencer (*op. cit.* p. 251), "arise within the great cerebral masses." He regards them as not very cohesive. "Those which have been experienced together or in succession either do not recall one another into consciousness at all, or do it but feebly after many repetitions" (p. 251). "They are excited not by physical agencies themselves, but by certain complex relations among them. It is impossible to bring instantly into consciousness the passion of anger, or that of joy, in however faint a form. Reproduction can be achieved only by imagining and dwelling upon some circumstances calculated to produce it" (p. 231).

Here, then, Fine Art has its opportunity. The sculptor, in "round" presentments of animal forms, and especially of the human figure, suggests emotion by attitude of limb, by contours of muscular action, by facial and corporal expression; and the

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same may be said of the painter in works of *genre*. We feel anew the passion of life, *la comédie humaine* is again enacted.

This is intelligible. It is more difficult to understand why landscape-painting should also possess feeling in a high degree, though it be almost confined to what is soft and tender. We are familiar with "the setting sun's pathetic light"; when every instant its intensity is lessening, when it falls aslant upon the land, when the flowers of the field stand out in the oblique illumination, when for a few moments new textures and colours are displayed by the forest, when distant curves and hollows are revealing themselves that noontide never discloses, and when around us a growing stillness gathers.

And what, too, is the singularity of the glance that we take of a beloved scene on leaving it; what instinctive selection do we make; on what does the eye linger in the last look? To reflect some aspect of that peculiar light, of those transient hues, of the vanishing elements that have formed part of our existence, is to make a painting pathetic also.

But a more important matter, though a less obtrusive one, is the tender feeling that is aroused by the sight and contemplation of minuteness. The grammarian recognises in our language the diminutive of endearment. The wee bairn, the tiny flower, are pleasing by their littleness; and smallness produced by perspective, whether linear or aërial, has a like effect. When we say of a railway train crossing a viaduct down in the valley, "How pretty it looks," the charm is in its toylike proportions; and the homestead that nestles on the far hill side, softened in colour and profile, no bigger than one's finger-tip, awakens a tender emotion.

But in a painted landscape all things are necessarily minute, and possess, in consequence, the endearment of diminutiveness. A miniature, too, has a softer effect than a full-sized portrait, and an expression of sternness is often produced by one that is larger than life.

Moreover, it should not be forgotten that, as similarity implies contrast, as contraries are associated with each other, a representation of stormy or angry scenes may please not only by its accuracy but by suggesting its opposite, as in the sentiment of Lucretius that Bacon paraphrases: "It is a pleasure to stand upon the shore and to see ships tost upon the sea":

> "Suave, mari magno, turbantibus æquora ventis,
> E terrâ magnum alterius spectare laborem;
> Non quia vexari quemquam est jucunda voluptas,
> Sed, quibus ipse malis careas, quia cernere suave est."

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The sight of danger to which he is not himself exposed exalts the spectator's enjoyment of security.

And, if so small a matter may now be mentioned, Fine Art does not disdain the aid of Artistic treatment in the framing, hanging, and balance of pictorial works, or in the site, backing, and canopy of sculpture; whilst Artistic treatment often decides whether the most prominent detail of a composition shall be placed on the observer's right hand or on his left.

If we admit that Fine Art exists solely for the purpose of furthering emotion, we may safely conclude that emotional craving originated it. And we shall be ready to believe those who tell us that the landscape-painting of Europe came from a development of backgrounds to the saintly figures of altar-pieces, whereas that which we find on the banks of the Nile sprang from a desire to cover the walls of tombs with scenes dear to the departed soul; whilst portrait-painting, too, had its origin in connection with the religious creeds of Egypt.

And if we accept, in any measure, the psychology of Art now advanced, we may find, perhaps unexpectedly, that "feeling" lies very close to sensation, that emotion is after all very relational, that central and epiperipheral feelings are associable and do not indeed greatly differ in revivability.

In conclusion, the five elements of Art may be analysed upon an urn. Artifice has moulded a hollow vessel of earth and has baked it so that it will hold water. As the gourd was in many cases its model, expectancy has required its base to be much narrower than strict utility might have provided; but the ring that was once a stand for it has now become its foot. Artistic treatment has given it outlines that we, or others, call graceful; has coloured its clay, and washed its surface with a translucent glaze; and has carried aloft in symmetrical curves those handles that were once of ozier or of cords.

Round the foot and shoulder and neck, expectancy has drawn bands of Ornament, skeuomorphs of binding, of basketry, or of textiles; and a phyllomorph is parasitic upon them. Embellishment has hung a foolish chain in a festoon between the handles. And Fine Art has filled the middle zone with a bas relief, or a painting, that moves the soul.

> "What leaf-fringed legend haunts about thy shape
> Of deities or mortals, or of both,
> In Tempe or the dales of Arcady?"

Thus, revealed upon a vase, we witness not alone the elements of Art, but its history, its psychology, and its evolution.

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II.—THE CONTRARY AND THE DISPARATE.

By F. H. Bradley.

In the following pages I am to raise some questions about the true character of the contrary or contradictory, first generally and next in relation to the disparate. The discussion, I fear, must be uninteresting in itself, but in some of its bearings may possess considerable importance.

If we are asked "What is contrary or contradictory?" (I do not find it necessary here to distinguish between these), the more we consider the more difficult we find it to answer. "A thing cannot be or do two opposites at once and in the same respect"—this reply at first sight may seem clear, but on reflection may threaten us with an unmeaning circle. For what are "opposites" except the adjectives which the thing cannot so combine? Hence we have said no more than that we in fact find predicates which in fact will not go together, and our further introduction of their "opposite" nature seems to add nothing. "Opposites will not unite, and their apparent union is mere appearance." But the mere appearance really perhaps only lies in their intrinsic opposition. And if one arrangement has made them opposite, a wider arrangement may perhaps unmake their opposition, and may include them all at once and harmoniously. Are, in short, opposites really opposite at all, or are they, after all, merely different? Let us attempt to take them in this latter character.

"A thing cannot without an internal distinction be (or do[1]) two different things, and differences cannot belong to the same thing in the same point unless in that point there is diversity. The appearance of such a union may be fact, but is for thought a contradiction." This is the thesis which to me seems to contain the truth about the contrary, and I will now try to recommend this thesis to the reader.

The thesis in the first place does not imply that the end

[1] This addition is superfluous.

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which we seek is tautology. Thought most certainly does not demand mere sameness which to it would be nothing. A bare tautology (Hegel has taught us this, and I wish we could all learn it), is not even so much as a poor truth or a thin truth. It is not a truth in any way, in any sense, or at all. Thought involves analysis and synthesis, and if the Law of Contradiction forbade diversity, it would forbid thinking altogether. And with this too necessary warning I will turn to the other side of the difficulty. Thought cannot do without differences, but on the other hand it cannot make them. And, as it cannot make them, so it cannot receive them merely from the outside and ready-made. Thought demands to go *proprio motu*, or, what is the same thing, with a ground and reason. Now to pass from *A* to *B*, if the ground remains external, is for thought to pass with no ground at all. But if, again, the external fact of *A*'s and *B*'s conjunction is offered as a reason, then that conjunction itself creates the same difficulty. For thought's analysis can respect nothing, nor is there any principle by which at a certain point it should arrest itself or be arrested. Every distinguishable aspect becomes therefore for thought a diverse element to be brought to unity. Hence thought can no more pass without a reason from *A* or from *B* to its conjunction, than before it could pass groundlessly from *A* to *B*. The transition, being offered as a mere datum, or effected as a mere fact, is not thought's own self-movement. Or in other words, because for thought no ground can be merely external, the passage is groundless. Thus *A* and *B* and their conjunction are, like atoms, pushed in from the outside by chance or fate; and what is thought to do with them but either make or accept an arrangement which to it is wanton and without reason,—or, having no reason for anything else, attempt against reason to identify them simply?

"But not at all," I shall be told, "for the whole case is otherwise. There are certain ultimate complexes given to us as facts, and these ultimates, as they are given, thought simply takes up as principles and employs them to explain the detail of the world. And with this process thought is satisfied." To me such a doctrine is quite erroneous. For these ultimates (*a*) cannot make the world intelligible, and again (*b*) they are not given, and (*c*) in themselves they are self-contradictory, and not truth but appearance.

Certainly for practice we have to work with appearance and with relative untruths, and without these things the sciences of course would not exist. There is, I suppose, here no question about all this, and all this is irrelevant. The question here is whether with so much as this the intellect

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can be satisfied, or whether on the other hand it does not find in the end defect and self-contradiction. Consider first (*a*) the failure of what is called "explanation." The principles taken up are not merely in themselves not rational, but, being limited, they remain external to the facts to be explained. The diversities therefore will only *fall*, or rather must be *brought*, under the principle. They do not come out of it, nor of themselves do they bring themselves under it. The explanation therefore in the end does but conjoin aliens inexplicably. The obvious instance is the mechanical interpretation of the world. Even if here the principles were rational intrinsically, as surely they are not, they express but one portion of a complex whole. The rest therefore, even when and where it has been "brought under" the principles, is but conjoined with them externally and for no known reason. Hence in the explanation there is in the end neither self-evidence nor any "because" except that brutally things come so.

"But in any case," I may hear, "these complexes are given and do not contradict themselves," and let us take these points in their order. (*b*) The transition from *A* to *B*, the inherence of *b* and *c* as adjectives in *A*, the union of discretion and continuity in time and space—"such things are facts," it is said. "They are given to an intellect which is satisfied to accept and to employ them." They may be facts, I reply, in some sense of that word, but to say that, as such and in and by themselves, they are given is erroneous. What is given is a presented whole, a sensuous total in which these characters are found; and beyond and beside these characters there is always given something else. And to urge "but at any rate these characters are there," is surely futile. For certainly they are not, when there, as they are when you by an abstraction have taken them out. Your contention is that certain ultimate conjunctions of elements are given. And I reply that no such *bare* conjunction is or possibly can be given. For the background is present, and the background and the conjunction are, I submit, alike integral aspects of the fact. The background therefore must be taken as a condition of the conjunction's existence, and the intellect must assert the conjunction subject in this way to a condition. The conjunction is hence not bare but dependent, and it is really a connection mediated by something falling outside it. A thing, for example, with its adjectives can never be simply given. It is given integrally with a mass of other features, and when it is affirmed of Reality it is affirmed of Reality qualified by this presented background. And this Reality (to go further) is and must be qualified also by what transcends

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any one presentation. Hence the mere complex, alleged to be given to the intellect, is really a selection made by or accepted by that intellect. An abstraction cuts away a mass of environing particulars, and offers the residue bare, as something given and to be accepted free from supporting conditions. And for working purposes such an artifice is natural and necessary, but to offer it as ultimate fact seems to me to be monstrous. We have an intellectual product, to be logically justified, if indeed that could be possible, and most certainly we have not a genuine datum.

At this point we may lay down an important result. The intellect cannot be reduced to choose between accepting an irrational conjunction or rejecting something given. For the intellect can always accept the conjunction not as bare but as a connection, the bond of which is at present unknown. It is taken therefore as by itself appearance which is less or more false in proportion as the unknown conditions, if filled in, less or more would swamp and transform it. The intellect therefore while rejecting whatever is alien to itself, if offered as absolute, can accept the inconsistent if taken as subject to conditions. Beside absolute truth there is relative truth, useful opinion, and validity, and to this latter world belong so-called non-rational facts[1].

[1] I use "validity" much in the sense in which it was made current, I believe, by Lotze, and in which it has been said, I presume, with some truth, partly to coincide with δόξα. For my own purposes I have tried elsewhere to fix the meaning of the term, and I think it would have been better if Mr Hobhouse, in his interesting and most instructive volume on *The Theory of Knowledge*, had remembered, when concerned with myself, that what is self-contradictory may also for me be valid. I should find it in general very difficult to reply to Mr Hobhouse's criticisms on my views, because in so many places I have to doubt if I can have apprehended his meaning. I understand him, e.g., to urge that a judgment must be categorically true, if its content can be shown to be "contained" in reality. But the question was, I supposed, not in the very least as to whether the content is contained in reality or not, but entirely as to *how*, being contained there, it is contained, i.e. whether categorically or otherwise. Again Mr Hobhouse seems to assume that, if a complex (such as the inherence of diverse adjectives or the union of continuity and discretion) is "fact," it therefore cannot be self-contradictory for thought. But surely the view he is engaged in controverting, holds precisely that to be false here which he, so far as I have seen, without any discussion assumes to be true. So that it is better that I should admit that I must have failed to follow the argument. This, I am sorry to add, is the case in most of the places where my views are criticized. The criticisms, e.g. on p. 495 and again in the footnote to p. 74, remain to me I regret to say, as I understand them, without application. I am quite disposed to admit that the fault may lie at least partly with myself, but the result is unfortunately as I have described it. If Mr Hobhouse has understood the main drift of the view he criticizes I have not been able for the most part to understand his criticism, and I do not doubt that I am the loser.

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(*c*) And any mere conjunction, I go on to urge, is for thought self-contradictory. Thought, I may perhaps assume, implies analysis and synthesis and distinction in unity. Further the mere conjunction offered to thought cannot be set apart itself as something sacred, but may itself properly and indeed must become thought's object. There will be a passage therefore from one element in this conjunction to its other element or elements. And on the other hand, by its own nature, thought must hold these in unity. But, in a bare conjunction, starting with *A* thought will externally be driven to *B*, and seeking to unite these it will find no ground of union. Thought can of itself supply no internal bond by which to hold them together, nor has it any internal diversity by which to maintain them apart. It must therefore seek barely to identify them, though they are different, or somehow to unite both diversities where it has no ground of distinction and union. And this does not mean that the connection is merely unknown and may be affirmed as unknown, and also, supposing it were known, as rational. For, if so, the conjunction would at once not be bare, and it is as bare that it is offered and not as conditional. But, if on the other hand it remains bare, then thought to affirm it must unite diversities without any internal distinction, and the attempt to do this is precisely what contradiction means.

"But," I shall be told, "you misrepresent the case. What is offered is not the elements apart, nor the elements plus an external bond, but the elements together and in conjunction." Yes, I reply, but the question is how thought can think what is offered. If thought in its own nature possessed a "together," a "between," and an "all at once," then in its own intrinsic passage, or at least somehow in its own way and manner, it could re-affirm the external conjunction. But if these sensible bonds of union fall outside the inner nature of thought, just as much as do the sensible terms which they outwardly conjoin—the case surely is different. Then forced to distinguish and unable to conjoin by its own proper nature, or with a reason, thought is confronted by elements that strive to come together without a way of union. The sensible conjunctions remain for thought mere other elements in the congeries, themselves failing in connection and external to the others. And, on the other hand, driven to unite without internal distinction thought finds in this attempt a self-contradiction. You may exclaim against thought's failure, and in this to some degree I am with you; but the fact remains thus. Thought cannot accept tautology and yet demands unity in diversity. But your offered conjunctions on the other

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side are for it no connections or ways of union. They are themselves merely other external things to be connected. And so thought, knowing what it wants, refuses to accept something different, something which for it is appearance, a self-inconsistent attempt at reality and truth. It is idle from the outside to say to thought, "Well, unite but do not identify." How can thought unite except so far as in itself it has a mode of union? To unite without an internal ground of connection and distinction is to strive to bring together barely in the same point, and that is self-contradiction.

Things are not contrary because they are opposite, for things by themselves are not opposite. And things are not contrary because they are diverse, for the world as a fact holds diversity in unity. Things are self-contrary when, and just so far as, they appear as bare conjunctions, when in order to think them you would have to predicate differences without an internal ground of connection and distinction, when, in other words, you would have to unite diversities simply, and that means in the same point. This is what contradiction means, or I at least have been able to find no other meaning. For a mere "together," a bare conjunction in space or time, is for thought unsatisfactory and in the end impossible. It depends for its existence on our neglecting to reflect, or on our purposely abstaining, so far as it is concerned, from analysis and thought. But any such working arrangement, however valid, is but provisional. On the other hand, we have found that no intrinsical opposites exist, but that contraries, in a sense, are made. Hence in the end nothing is contrary nor is there any insoluble contradiction. Contradictions exist so far only as internal distinction seems impossible, only so far as diversities are attached to one unyielding point assumed, tacitly or expressly, to be incapable of internal diversity or external complement. But any such fixture is an abstraction, useful perhaps, but in the end appearance. And thus, where we find contradiction, there is something limited and untrue which invites us to transcend it.

Standing contradictions appear where the subject is narrowed artificially, and where diversity in the identity is taken as excluded. A thing cannot be at once in two places if in the "at once" there is no lapse, nor can one place have two bodies at once if both claim it in their character as extended. The soul cannot affirm and deny at a single time, unless (as some hold) the self itself may be divided. And, to speak in general, the more narrowly we take the subject, and the less internal ground for diversity it contains, the more it threatens us with standing or insoluble contradictions. But, we may

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add, so much the more abstractedness and less truth does such a subject possess. We may instance the presence of "disparate" qualities, such as white, hard and hot, in a single thing. The "thing" is presented as one feature of an indefinite complex, and it is affirmed as predicate of a reality transcending what is given. It is hence capable in all ways of indefinite addition to its apparent character. And to deny that in the "real thing" can be an internal diversity and ground of distinction seems quite irrational. But so far as for convenience or from thoughtlessness the denial is made, and the real thing is identified with our mutilated and abstract view of the thing—so far the disparate qualities logically clash and become contradictory[1].

The Law of Contradiction tells us that we must not simply identify the diverse, since their union involves a ground of distinction. So far as this ground is rightly or wrongly excluded, the Law forbids us to predicate diversities. Where the ground is merely not explicit or remains unknown, our assertion of any complex is provisional and contingent. It may be valid and good, but it is an incomplete appearance of the real, and its truth is relative. Yet, while it offers itself as but contingent truth and as more or less incomplete appearance, the Law of Contradiction has nothing against it. But abstracted and irrational conjunctions taken by themselves as reality and truth, in short "facts" as they are accepted by too many philosophers, the Law must condemn. And about the truth of this Law, so far as it applies, there is in my opinion no question. The question will be rather as to how far the Law applies and how far therefore it is true.

We have awaiting us a further enquiry into the "disparate" as distinct from the contrary, but, before we proceed, there is a matter we may do well to consider. In this attempt to attribute diversity and to avoid contradiction what in the end would satisfy the intellect supposing that it could be got? This question, I venture to think, is too often ignored. Too often a writer will criticize and condemn some view as being that which the mind cannot accept, when he has never asked himself what it is that would satisfy the intellect, or even whether the intellect could endure his own implied alternative. What in the end then, let us ask, would content the intellect?

While the diversities are external to each other and to their union, ultimate satisfaction is impossible. There must, as we have seen, be an identity and in that identity a ground

[1] Of course the real thing or the reality of the thing may turn out to be something very different from the thing as we first take it up.

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of distinction and connection. But that ground, if external to the elements into which the conjunction must be analyzed, becomes for the intellect a fresh element, and it itself calls for synthesis in a fresh point of unity. But hereon, because in the intellect no intrinsic connections were found, ensues the infinite process. Is there a remedy for this evil?

The remedy might lie here. If the diversities were complementary aspects of a process of connection and distinction, the process not being external to the elements or again a foreign compulsion of the intellect, but itself the intellect's own *proprius motus*, the case would be altered. Each aspect would of itself be a transition to the other aspect, a transition intrinsic and natural at once to itself and to the intellect. And the Whole would be a self-evident analysis and synthesis of the intellect itself by itself. Synthesis here has ceased to be mere synthesis and has become self-completion, and analysis, no longer mere analysis, is self-explication. And the question how or why the many are one and the one is many here loses its meaning. There is no why or how beside the self-evident process, and towards its own differences this whole is at once their how and their why, their being, substance and system, their reason, ground, and principle of diversity and unity.

Has the Law of Contradiction anything here to condemn? It seems to me it has nothing. The identity of which diversities are predicated is in no case simple. There is no point which is not itself internally the transition to its complement, and there is no unity which fails in internal diversity and ground of distinction. In short "the identity of opposites," far from conflicting with the Law of Contradiction, may claim to be the one view which satisfies its demands, the only theory which everywhere refuses to accept a standing contradiction. And if all that we find were in the end such a self-evident and self-complete whole, containing in itself as constituent processes the detail of the Universe, so far as I see the intellect would receive satisfaction in full. But for myself, unable to verify a solution of this kind, connections in the end must remain in part mere syntheses, the putting together of differences external to one another and to that which couples them. And against my intellectual world the Law of Contradiction has therefore claims nowhere satisfied in full. And since, on the other hand, the intellect insists that these demands must be and are met, I am led to hold that they are met in and by a whole beyond the mere intellect. And in the intellect itself I seem to find an inner want and defect and a demand thus to pass itself beyond itself. And against this conclusion I have not yet seen any tenable objection.

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If in the presence of some misunderstandings I may dwell on the view which to me appears to be true, it is briefly this. That abstract identity should satisfy the intellect, even in part, is wholly impossible. On the other hand I cannot say that to me any principle or principles of diversity in unity are self-evident. The existence of a single content (I will not call it a quality) which should be simple experience and being in one is to me not in itself impossible intrinsically. If I may speak mythologically I am not sure that, if no diversity were given, the intellect of itself could invent it or would even demand it. But, since diversity is there as a fact, any such hypothesis seems illegitimate. As a fact and given we have in feeling diversity and unity in one whole, a whole implicit and not yet broken up into terms and relations. This immediate union of the one and many is an "ultimate fact" from which we start; and to hold that feeling, because immediate, must be simple and without diversity is, in my view, a doctrine quite untenable[1]. That I myself should have been taken as committed to this doctrine is to me, I must be allowed to add, really surprising. But feeling, if an ultimate fact, is not true ultimately or real. Even of itself it is self-transcendent and transitory. And, when we try to think its unity, then, as we have seen, we end in failure. For thought in its own nature has no "together" and is forced to move by way of terms and relations, and the unity of these remains in the end external and, because external, inconsistent. But the conclusion I would recommend is no vain attempt either to accept bare identity or to relapse back into a stage before thinking begins. Self-existence and self-identity are to be found, I would urge, in a whole beyond thought, a whole to which thought points and in which it is included, but which is known only in abstract character and could not be verified in its detail.

And since I find that in some quarters I have been taken to build on assumptions I am unable to recognize, the reader perhaps will bear with me if I try to set down what it is that I have assumed. I have assumed first that truth has to satisfy the intellect, and that what does not do this is neither true

[1] Feeling is certainly *not* "un-differentiated" if that means that it contains no diverse aspects. I would take the opportunity to state that this view as to feeling is so far from being novel that I owe it, certainly in the main, to Hegel's psychology. In the same way what I have urged as to the Association of Ideas is in principle mainly taken from the same source. It would be interesting to learn from some student of the history of philosophy to what extent and through what channels ideas from German Idealism have filtered unacknowledged into empirical psychology.

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nor real. This assumption I can defend only by showing that any would-be objector assumes it also. And I start from the root-idea of being or experience, which is at once positive and ultimate. Then I certainly do not go on to assume about being that it must be self-contained, simple or what not?—but I proceed in another manner. I take up certain facts or truths (call them what you please) that I find are offered me, and I care very little what it is I take up. These facts or truths, as they are offered, I find my intellect rejects, and I go on to discover why it rejects them. It is because they contradict themselves. They offer, that is, a complex of diversities conjoined in a way which does not satisfy my intellect, a way which it feels is not its way and which it cannot repeat as its own, a way which for it results in mere collision. For, to be satisfied, my intellect must understand, and it cannot understand by taking a congeries, if I may say so, in the lump. My intellect may for certain purposes, to use an old figure, swallow mysteries unchewed, but unchewed it is unable in the end to stomach and digest them. It has not, as some opponents of Hegel would seem to assume, any such strange faculty of sensuous intuition. On the contrary my intellect is discursive, and to understand it must go from one point to another, and in the end also must go by a movement which it feels satisfies its nature. Thus, to understand a complex AB, I must begin with A or B. And beginning, say, with A, if I then merely *find* B, I have either lost A or I have got beside A something else, and in neither case have I understood. For my intellect cannot simply unite a diversity, nor has it in itself any form or way of togetherness, and you gain nothing if beside A and B you offer me their conjunction in fact. For to my intellect that is no more than another external element. And "facts," once for all, are for my intellect not true unless they satisfy it. And, so far as they are not true, then, as they offered, they are not reality.

From this I conclude that what is real must be self-contained and self-subsistent and not qualified from the outside. For an external qualification is a mere conjunction, and that, we have seen, is for the intellect an attempt of diversities simply to identify themselves, and such an attempt is what we mean by self-contradiction. Hence whatever is real must be qualified from itself, and that means that, so far as it is real, it must be self-contained and self-subsistent. And, since diversities exist, they must therefore somehow be true and real; and since, to be understood and to be true and real, they must be united, hence they must be true and real in such a way

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that from *A* or *B* the intellect can pass to its further qualification without an external determination of either. But this means that *A* and *B* are united, each from its own nature, in a whole which is the nature of both alike. And hence it follows that in the end there is nothing real but a whole of this kind[1].

From the other side—Why do I hold reality to be a self-contained and self-consistent individual? It is because otherwise, if I admit an external determination and a qualification by an other, I am left with a conjunction, and that for the intellect is a self-contradiction. On the other hand the real cannot be simple, because to be understood, it must somehow be taken with and be qualified by the diversity which is a fact. The diversity therefore must fall within and be subordinate to a self-determined whole, an individual system, and any other determination is incompatible with reality. These ideas may be mistaken, but to my mind they do not seem to be obscure, nor again are they novel. But, if I may judge from the way in which some critics have taken them, they must involve some great obscurity or difficulty. But, not apprehending this, I am unfortunately unable to discuss it[2].

We have found so far that nothing in itself is opposite and refuses to unite. Everything again is opposite if brought together into a point which owns no internal diversity. Every bare conjunction is therefore contradictory when taken up by thought, because thought in its nature is incapable of conjunction and has no way of mere "together." On the other side no such conjunction is or possibly could be given. It is itself a mere abstraction, useful perhaps and so legitimate and

[1] And hence it follows also that every "part" of this whole must be internally defective and (when thought) self-contradictory. For otherwise how from one to others and the rest could there be any internal passage? And without such a passage and with but an external junction or bond, could there be any system or whole at all which would satisfy the intellect, and could be taken as real or possible? I at least have given my reason for answering this question in the negative. We may even, forgetting other points of view, say of the world,

"Thus every part is full of vice
And yet the whole a paradise."

[2] The Law of Identity, I may be allowed to note in this connection, is the denial that truth, if true, is alterable from the outside. For, if so, it would become either itself conjoined with its own absence, or itself conjoined with a positive other; and either alternative (to take them here as alternatives), we have seen, is self-contradictory. Hence any mere context cannot modify a truth so far as it is true. It merely adds, we must say, something more which leaves the truth unaffected. Truth cannot be modified, in other words, except from within. This of course opens a problem, for truth seems on the one hand to be abstract, as truth, and so incomplete, and on the other hand, if true, to be self-contained and even self-existent.

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so far valid, but taken otherwise to be condemned as the main root of error.

Contradiction is appearance, everywhere removable by distinction, and by further supplement, and removed actually, if not in and by the mere intellect, by the whole which transcends it. On the other hand contradiction, or rather what becomes such, as soon as it is thought out, is everywhere necessary. Facts and views partial and one-sided, incomplete and so incoherent—things that offer themselves as characters of a Reality which they cannot express, and which present in them moves them to jar with and to pass beyond themselves—in a word *appearances* are the stuff of which the Universe is made. If we take them in their proper character we shall be prone neither to over-estimate nor to slight them.

We may pass now possibly with some relief to the second part of our discussion, the distinction to be drawn between the contrary and the disparate. It is a psychical fact that some qualities are what is called compatible and others not so. This fact has in psychology considerable importance, and in turning to deal with it I have to begin by lamenting the defective character of my psychological studies, and my too probable ignorance of valuable contributions to the enquiry. But I do not see that any explanation of this fact could invalidate the principles we have laid down. If, as may well be, the fact of incompatibility should prove in detail inexplicable, that will tend but to show our ignorance of particulars. And, so far as within my knowledge the fact can be explained, it may serve I think to illustrate and confirm our general account of the contrary.

Psychology, I should add, is for me one of the empirical sciences. It has to accept and work with principles which it could not defend as more than useful fictions. Its task is to systematize its facts by bringing them under ideas which are to be judged solely by their efficacy. Psychology to me is rational even while working only thus and though unable to pass beyond these limits. And whatever view in the end metaphysics may adopt about the nature of the soul, I cannot see how in any case it could show that anywhere psychology has gone wrong—unless it has gone wrong also when judged by its own proper principles. But, if so, empirical psychology need trouble itself nothing about objections urged by metaphysicians from the outside. It may safely leave these to be controverted by rival metaphysicians[1].

[1] I would here express my regret that Professor Wallace, in his Introduction to *Hegel's Philosophy of Mind*, has not fully explained himself

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I will at once briefly state the conclusion I have reached so far as I have reached any. There is for psychology nothing in itself incompatible or opposite or contrary. Diversities become contrary where to exist they must occupy the same point. Wherever there is no arrangement by which the soul can keep differences apart, these differences are contrary. It is the attempt of two players to perform at the same time on one instrument, an instrument the keyboard of which of course is limited[1]. So far as our instrument is physical the reason is clear. You cannot have two different motions in the same body, because you assume that one body cannot be at the same time in two places. The motions in the end may remain unknown, but the principle, so far as it goes, seems evident. And this principle may be carried into the psychical sphere. All differences in the soul must fall under an identity, and where in this identity a diversity is absent and remains so, the differences, so far, are and must remain contrary. The psychical machinery for distinction may, like the physical, remain unknown, but the principle, so far as it goes, once more seems sound. I will endeavour now, so far as I can, to justify this conclusion, and to point out how some other views arrange themselves under it.

The facts to be dealt with are in the main familiar. There are some diverse qualities, such as colour and heat, which seem compatible. But there are others—like black and white, or cold and hot, or denial and assertion, or in the body bending and straightening of a limb—which will not go together. These qualities are "incompatible," and starting from such general facts I will make some distinctions which I hope may serve to assist us.

(i) Incompatibility may be secondary and merely acquired. If A and B are contrary, and if C is in some way, by habit, association, or otherwise, connected with either of A or B, then (if C is indivisible), C becomes incompatible with the other. Or again, if A and B have become connected, then a separate A or B becomes a C incompatible with their union. And in either case C may become contrary *de facto* merely,

on a somewhat important point. I understand him to hold that, beside what he takes to be the one true and rational psychology (Hegel's), no mere working and in the end untrue psychology has a right to exist. For myself I fail to see the incompatibility which Professor Wallace assumes, and I could wish that he had attempted, on the one hand, to justify this view, so far as it is his own, and had, on the other hand, given the reasons which I do not doubt he has, for treating this view as necessarily Hegel's. Hegel must bear his own burdens and this may be one of them, but I think it is our duty to ask for the evidence.

[1] Cf. Stricker, *Sprachvorstellungen*, p. 90.

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or it may become further qualified by the idea of the negation of *A* or *B*. This secondary incompatibility and this qualification by an idea of negation are matters which in their place possess very great importance. But it seems possible to ignore them here, and I intend to pass them by.

(ii) We have next the incompatibility which is found always, and the incompatibility which exists only sometimes. The latter is exemplified by the limits of our attention. If I am engaged on one thing, then beyond a certain limit anything else is incompatible. And quite apart from active attention we may verify the same result. There is a point—a variable point changing in the highest degree under changing conditions—at which anything beyond is for the soul something too much and so tending to become contrary. These are two examples of one sort of temporary opposition.

(iii) And there is another kind—if it really is another kind—of temporary contrariness, where I am at present unable to make a certain distinction. The want of power separately to move the fingers or close the eyes seems an example of this, while inability to rotate the thumbs in different directions would probably fall under No. (i). And in the mental world we have failure to make distinctions in an intellectual or moral whole, inability, for instance, to regard a case of conduct from a point of view which is not that natural to oneself.

(iv) After these perhaps too rough distinctions we come to the incompatibility which is residual. This we may call primary, that is, not acquired or removeable contrariness.

It is impossible for me to show that the facts of this fall under the principle which I have laid down, since an attempt at explanation would soon become a mere appeal to the unknown. But I will point out that nothing in the facts even tends to conflict with our principle, and that other accounts, so far as tenable, seem to be included within it. The principle is that two tunes cannot be played on one instrument, unless so far as in that instrument an arrangement for distinguishing them exists or can be developed. The same in short cannot be diverse without an internal condition of its diversity. Now what we have called "secondary" incompatibility need not be considered. The questions it raises seem to fall outside our present discussion, and I will therefore take first the incompatibility from limitation. If the physical and psychical area is occupied and not further increasable, anything fresh must be excluded unless somehow there is joint occupation. And in fact of course the psychical area is limited, though probably no reason that is not physical can be assigned for this. But joint occupation is possible only where

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the fresh element can unite with what exists either by fusion or else by subordination, under or with it, into a group or system. But the latter arrangement implies some means of distinction. If, while attending, I can bring anything new under my leading idea, or can modify or transform my idea so as to include it, in that case I can attend to it, and otherwise it remains incompatible. And the same account holds of my ability to separate actions usually conjoined. If I can hold the distinction between them clearly, a division may be possible, and otherwise not. Lastly primary incompatibility itself will fall under the same main principle. If the same surface refuses to be black and white, it is because there is no arrangement for uniting these diversities apart. Hence they strive to occupy the same point, which is not possible. And when the same is warm and white, or cold and black, it is because in the organ there is an arrangement for conjoining this diversity. The detail largely seems to be unknown, but the abstract principle seems clear. Compatibility depends on the provision of internal diversity, and it is an affair of machinery, physical and psychical. On the general nature of the machinery I will say something lower down, and will now pass on to consider briefly some other ways of explanation.

(1) The general identity or unity of the soul as a working principle will not take us far. Certainly a claim to the same point is a reason for collision, but then we actually and as a fact do have diversities present in the soul. The unity therefore makes contraries only in a certain case, where, that is, there is in the soul no ground of diversity. But this is clearly the principle which we have adopted above. And some such ground of diversity, I would add, we must assume to exist even in the merest complex feeling. (2) But identity, taken as a special identity, must be further considered. It is (*a*) evidently a ground of collision when it works through Association, that is, by Redintegration of the discrepant. But this process will fall under the head of secondary incompatibility[1]. (*b*) Identity producing contraries by partial fusion is a process more difficult to deal with. Two elements are here taken to blend in their common part, and therefore to collide with the rest. And we must, I think, admit that such blending would produce a collision, and that in the end this process could not wholly be brought under the head of Redintegration. But whether such fusion is more than hypo-

[1] This is how Association is able to analyze and dissociate. I would venture to refer here to my *Principles of Logic*, p. 445.

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thetical admits of doubt. This is, however, a point which it is not necessary for me here to discuss. For in any case the fusion would lead to collision only so far as the common point is simple, and, if in that point a distinction exists or could be made, the collision would disappear. And thus the process, so far as it is real, will clearly fall under our main principle. (3) The description of contraries as the furthest apart in their genus is not, I presume, to be taken as an explanation of the contrary. Whether it is or is not true in fact that contraries must belong to one genus, will depend on the sense in which genus is taken. But, so far as the genus explains collision, it will be equivalent to identity, and we have discussed it already. (4) I will come next[1] to the account of contraries offered by Lotze, *Logik*, p. 98. I find this somewhat obscure, and I am in considerable doubt as to its meaning. Contraries, he says, are incompatible because their conditions cannot co-exist. And their conditions cannot co-exist because they must combine to form a resultant in which they are lost. Now it might be objected that the problem here is but shifted from the contrary to its conditions, and so is not solved; but Lotze's meaning I rather take to be this. If you are to have diversities in one, and if they are neither to start wholly asunder or to blend, you must have some machinery for keeping them both together and yet apart, and, where that fails, you have the contrary and not the disparate. Diversities are contrary where their production involves the same machine, and where in the machine there is no provision for the separation of the actions which produce them. And, if this is Lotze's meaning, we may claim his valued support for the main doctrine of this article. At all events we have found nothing which seems to conflict with that doctrine.

Diversities are contrary psychically when they seek to occupy one point which internally is not diverse. But how in the end are we to understand and to formulate this? What is the point and the machinery of which we have spoken? I can only attempt to answer this question in the abstract and generally.

[1] I do not understand Prof. Binet (*Rev. Phil.* 170, p. 150) to be dealing at all with the general question of psychical incompatibility; and, so far as he touches on it, I am not sure that I am able to follow him. But the fact that incompatibles may cease to be such when one becomes automatic, will fall easily under the principle we have been defending. Either a division in the self allows of diversity and a distinction in what before was a single point of union, or else by the lowering of one function a less demand is made on the available energy. But the question of the Unity of Thought is a special problem to which I hope at some time to return.

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(i) From the physical side, if the available energy is limited, that at once limits the actions of the machine, and so produces incompatibility. But the main principle may be put thus. Certain actions, if performed, must be performed by certain parts of the machine. We need not for our present purpose seek to ask why this is so, but must take it as a fact. But two movements of the same part, if that part is simple, cannot possibly co-exist. And two movements of diverse parts cannot co-exist so far as those movements collide. Hence anything which directly or indirectly would involve such co-existence is incompatible with itself. The ultimate principle here is obviously the relation of body to space. If spaces are exclusive, then one body cannot have two spaces or one space two bodies, unless a distinction in time or some other distinction is introduced. Such is, I presume, the general nature of physical incompatibility. But how in detail it is to be understood is a question beyond my knowledge. If the physical motions could be reduced to movements of muscles, the problem would be much simplified. But apparently in the end no such simplification is possible.

(ii) The physical cause of incompatibility is in its detail unknown, and how far in its detail it ever will be known is, I presume, uncertain. And we are led to ask if on the psychical side incompatibility in the end can be understood. We saw that secondary or acquired contrariety was to be explained by Association, but, when we came to what is primary, the case was different. To account for this psychically in detail is, I believe, quite impossible, and to find the special reason why certain qualities do and others do not collide appears to me hopeless. But on the other hand to have a way of bringing these particular facts under a general point of view may be desirable. And for working purposes and by a useful fiction we may regard the matter thus. The soul we may take to be an area or space varying in extent and amount, and the parts or positions in this area may have psychical "local signs." They may be viewed as possessing qualitative differences under a qualitative sameness, a diversity in identity not distinguished by relations but forming a felt totality. Now this area will be increasable by the addition of more parts qualitatively diverse under the same general quality. And further each part itself may be internally increasable by fresh qualitative diversity under and subject to the sameness of its own special quality. Now starting from this basis we may in a sense understand the general fact of psychical contrariety. All sensible qualities are compatible so long as each keeps to a diverse "local sign." But any

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sensible qualities will be incompatible if they attempt to occupy the same undivided point. *A* must repel *B* if, to be experienced, both must be present in a simple *x*. But on the other hand if *x* itself has, or again if it can in any way develope, an internal diversity, then wherever this is so *A* and *B* are compatible. In this way we can represent to ourselves the general facts both of collision and again of growth in internal particularity. And I venture to think that such a way of regarding the facts is useful. In the end it is indefensible of course, it is in itself self-contradictory and unintelligible, because between the identity and the diversity there is no inner connection. They are merely conjoined, and a mere conjunction, we have seen, contradicts itself. But the principles of physical science, so far as I am able to perceive, are in precisely the same case. These sciences end, if I may say so, in working fictions and in useful nonsense, and I see no reason why we should allow them a monopoly of that. Psychology on its side too is compelled certainly to employ some fictions, and if this fiction of discrete points in the continuous soul—points which may or may not themselves develope an internal discretion—is convenient, there is no more to be said. For physical or spatial continuity and discretion is itself in the end irrational and inconsistent. Only let us be clear that we have but a general way of regarding contrariety where it happens, and that a particular explanation is out of our power.

We have seen both in the soul and generally the nature of incompatibles or contraries. There are no native contraries, and we have found no reason to entertain such an idea. Things are contrary when, being diverse, they strive to be united in one point which in itself does not admit of internal diversity. And for the intellect any bare conjunction is an attempt of this sort. The intellect has in its nature no principle of mere togetherness, and the intellect again can accept nothing which is alien to itself. A foreign togetherness of elements is for the intellect, therefore, but one offered external element the more. And, since the intellect demands a unity, every distinguishable aspect of a "together" must be brought into one. And if in this unity no internal connection of diversity natural to the intellect can be found, we are left with a diversity belonging to and conjoined in one undistinguished point. And this is contradiction, and contradiction in the end we found was this and nothing but this. On the other hand we urged that bare irrational conjunctions are not given as facts. Every perceived complex is a selection from an

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indefinite background, and, when judged as real, it is predicated both of this background and of the Reality which transcends it. Hence in this background and beyond it lies, we may believe, the reason and the internal connection of all we take as a mere external "together." Conjunction and contradiction in short is but our defect, our one-sidedness, and our abstraction, and it is appearance and not Reality. But the reason we have to assume may in detail be not accessible to our intellect. And turning to psychology we found that contrariety was original and acquired, and that of the particulars of original incompatibility no explanation could be given. Such an explanation from the side of mind seems impossible, and from the side of body not yet attainable. But, on the other hand, we found that from the side of mind a certain hypothesis was convenient and therefore justified[1].

[1] I find that I have forgotten to notice in its proper place a question which might possibly give rise to difficulty. How are we able at all to think of incompatibility? The answer in general is, I presume, this. We think of incompatibles first as compatible, that is as elements united in one whole but divided by a distinction made in that whole. We then think of the suppression of this distinction with the result of a struggle between the elements for the possession of the individual unity. To think of incompatibles at all you therefore must represent them as partly compatible and as elements in one whole. This doctrine has important bearings.

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III.—ON THE INTERPRETATION OF PLATO'S *PARMENIDES*. (II.)

By A. E. Taylor.

A good deal of discussion has been bestowed, as I think without need, on the question, What are the "One" and "Many" of the Parmenidean hypotheses? Is the "One" the supreme Idea which is elsewhere known as the "Idea of Good," and the "Many" consequently the rest of the contents of the Ideal world, or does the "One" represent any Idea and the "Many" the sensible particulars corresponding to it? As to this point, while we may notice that Parmenides expressly says (136 A) that the method is applicable to any Idea, his further specification (137 B) of the subject to be discussed as "his own" hypothesis of the One seems to decide for the first alternative and against the second. If what we are to examine is to bear any likeness to the Eleatic One, even as read by the light of a more developed metaphysic, then it must be no lower and partial kind of unity, but the ultimate unity of absolute reality, which we are invited to discuss. In more modern language, it is not simply the conception of system in general, but the conception of the world as an all-inclusive system, which Plato intends to unfold. This view is indeed so natural that its correctness would probably never have been questioned but for the following reflection. If τὸ ἕν be the absolute One it would seem that τὰ ἄλλα must be the world of subordinate Ideas. In that case however we shall be discussing not the old problem with which the first half of the dialogue was concerned, How is the Idea related to the particular thing? but a new and independent question of the relations of Ideas among themselves; and must therefore confess that we, like others, have failed to find a connection between the preceding pages and what follows. It seems therefore that, in spite of Parmenides' description of the subject under discussion, we ought to decide for the second of our two alternatives. Plausible

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as this argument is, it rests to my mind on a fallacy, and a fallacy of which the previous reasonings of Parmenides should have disabused us. It assumes that very distinction of two "worlds"—a sensible and an ideal—which we have felt ourselves constrained to abandon. While we still allowed that unhappy superstition to infect our understanding it was of course natural enough to argue that a discussion about relations in the ideal world could not at the same time be a discussion of the relation of the ideal to the sensible world. Now, however, that we have abandoned our earlier dualism, we should be able to see that, as the supposed "two" worlds are one world, so the "two" questions are only two ways of putting the same question. As soon as we realise what Plato is constantly trying to make us understand, that the "ideal" world simply means the real world in so far as it becomes an object for knowledge, we should have no difficulty in seeing that the problem how one "Idea" can be present to many "things" and the problem how one "Idea" can while preserving its unity enter into relations with many other "Ideas," are only two ways of raising the same question. For a thing, in the only sense in which a thing is knowable, is nothing more or less than a certain system of Universals, or, in Platonic phraseology, Ideas. There is, of course, about a thing as sensible a something more or less which makes all the difference between the thing as merely thought of and the thing as actually present to sense. From the nature of the case, however, no one can give any intelligible account of what that "something" is, (*cf.* Plato's own language on a similar question, *Tim.* 51 B) and it has no bearing whatever on the difficulty with which we are concerned. The feat which we decided had to be accomplished if philosophy was to exist—the reconciliation of unity with diversity—confronts us just as much when we make any judgment about a thing which we merely think of as when we judge about a thing actually present to sense-perception. The conception of the world as a unity which can only exist so far as it is also a diversity is the answer, or part of the answer, to both problems. The proof that unity, so far from being incompatible with diversity, cannot exist without it, while dealing throughout with relations between *Ideas*, is the required solution of *our* difficulty about the connection of Idea and thing[1].

I do not propose to present any scheme or abstract of the connection between the various hypotheses at the present stage of our discussion. Convenient as such a scheme would be, its accuracy could only be tested after a laborious comparison of

[1] Cf. on this question Zeller, *Platonische Studien*, p. 167, 168.

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its statements with the details afterwards to be given, and its proper place is where I have put it, at the end and not at the beginning of the enquiry. I will merely protest in passing against the misrepresentations which the desire for symmetry at any cost has introduced into some accounts of the hypotheses, notably Zeller's in *Platonische Studien* and Apelt's in *Beiträge zur Geschichte der Griechischen Philosophie*. Neither of these writers has been able to resist the temptation to arrange the hypotheses in four sets of antinomies, each antinomy starting from a common presupposition. Such an arrangement however only succeeds in obtaining an external symmetry by disregarding Plato's own clearly marked divisions between the various arguments. If we attend carefully to the breaks in the text we shall in fact see that the real number of separate arguments is not eight but nine, though it is true that two (the second and third,) are so closely connected that they may without any serious inaccuracy be treated, as Zeller has treated them, as one continuous argument. The case is different with hypotheses 8 and 9, which Apelt throws into one in order to get *his* symmetrical arrangement of theses and antitheses. These two arguments are, as we shall presently see, so far from being complementary that they actually exclude each other. To pass now to the consideration of the separate hypotheses in detail.

We may divide the hypotheses generally into two classes, (*a*) those which start from the affirmation of the world's unity, (*εἰ τὸ ἓν ἐστι*), (*b*) those which begin by denying it (*εἰ τὸ ἓν μὴ ἔστι*). Of the former class are hypotheses 1–5 (137 C–160 B), of the latter numbers 6–9 (160 B–166 C). In each of these two divisions we have a further sub-division; we trace first the consequences with respect to *τὸ ἓν* itself which follow from our original assumption (1, 2, 3, 6, 7), next those which relate to *τὰ ἄλλα* (4, 5, 8, 9). We have thus four questions before us which may be tabulated thus:—

(1) If the unity of the world be affirmed, what judgments can we make about that unity? (1, 2, 3.)

(2) If the unity of the world be affirmed, what judgments can we make about its multiplicity? (4, 5.)

(3) If the unity of the world be denied, what judgments can we make about that unity? (6, 7.)

(4) If the unity of the world be denied, what judgments can we make about its multiplicity? (8, 9.)

We shall however see directly that this arrangement of the hypotheses is based on the merely superficial characteristics of external form: their real relations of agreement and opposition we shall only be able to formulate at a later stage of our inquiry, after detailed examination of their contents.

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Hypothesis 1 (137 C–142 B), which we will now proceed to examine, introduces us to one way of answering our first question. We must notice first the exact character of the assumption with which we start. That assumption, as stated in the words *εἰ ἕν ἐστι*, is a judgment of which only the predicate is enunciated, while the subject is left to thought to supply. This unexpressed subject is, as the course of the reasoning, as well as the linguistic usage, shows, *τὸ ὄν* or *τὰ ὄντα*, and the logical form of the hypothesis is therefore that of a judgment in which "unity" appears as the predicate which is affirmed of complete or absolute reality. We begin,—and this glaringly rash beginning will be the sole source of the perplexity in which we shall directly find ourselves,—by laying it down that a certain predicate is true of ultimate reality, and we then go on to exclude from that reality all other predicates which conflict with the one we have ascribed to it. This is done in detail as follows:—Reality is *one*: therefore it is not *many*. Therefore it has no distinction of *parts*, and having no parts is *not a whole*. Similarly it has no definite *limits* or *bounds*, and no *figure* or *shape*: both would imply that distinction of parts which is by our hypothesis impossible. For the same reason it has no *spatial position or extension*: (138 A) it can neither be contained in anything else nor in itself. For if contained in anything else, it must touch that which contains it at various points, which is inconsistent with its perfect unity, and if self-contained, it will be different *quâ* containing envelope from itself *quâ* contained, and this also is equally fatal to its unity. This argument may, I suppose, be paraphrased in more modern language thus. A world which is mere unity cannot have spatial determinations. For if, when we speak of the world as "being in" space, we think of space as in some way real independently of the world and enveloping it all round, we shall have to admit a multiplicity of relations between the world and the various points of space itself[1]; and if we treat space on the other hand as "being in" the world, it becomes a set of relations between one part of the world and the world as a whole, and thus in either case we introduce diversity and multiplicity into the original unity.

Once more, *motion* and *rest* are alike inconceivable in a world which is such a unity. For we may conceive of motion in the widest sense as either (*a*) *qualitative* change or (*b*) *change of position*. As for the first, its irreconcileability with bare self-identity is at once apparent. And the second is no less out of the question. For the change of position may be either *relative* or *absolute*. If *relative*—as in the case of rotation round

[1] For otherwise we should have an extended world without extension.

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an axis[1]—it implies just that distinction of parts in the world's unity which we refuse to recognise. And if *absolute—i.e.* if the whole world be conceived of as changing its place, we come to a double contradiction. For (1) we have already seen that the world as a whole cannot be in place at all, and (2) still less can it "*come into*" place: for it could only do so by the gradual entrance of first one part of itself and then another into the given space. But it has by hypothesis no distinction of parts. Every form of change and motion must therefore be excluded from the real world, if reality be a mere self-identical unit.

Neither can reality be "at rest" or "unchanging." For to be "at rest" or "changeless" means to remain "in the same state" in which you already are. And we have already seen that reality never is "in" any "state" or "position[2]." Thus "rest," "self-maintenance," or any other form in which we seek to express the permanent self-sameness of the intelligible world, proves in the end as unthinkable as its opposite.

But we may go much further than this (139 B). Dropping any spatial scheme or metaphor by which we have hitherto sought to understand what self-sameness is, we must raise the question whether *any* sameness with itself or *any* diversity from what falls outside it can be asserted of such an intelligible world as we are trying to maintain. And we are driven to admit that these predicates can in no way attach to bare unity. The real is neither identical with nor different from itself or anything else. Two of these conclusions lie at once ready to hand, and would probably be endorsed by "common-sense" philosophy. The real cannot be different from itself nor identical with anything else: were it different from itself it would no longer be unbroken unity; and were it identical with something else it would be identical with what is other than unity, and therefore itself no longer unity. We can also see that it cannot be *different* from anything else (139 C). For it is no part of the essence or nature of

[1] This is the only form of relative change of place Plato mentions, but the argument is of universal application.

[2] The vague nature of such expressions as ἐν τῷ αὐτῷ εἶναι makes it peculiarly difficult to set out Plato's argument in another language in its full force. The reference here is of course to the previous proof that the unitary real is not "anywhere" (see above). In translating into English it was unavoidable to make the spatial reference more exclusively prominent than it is in the Greek. But the reader will easily see that the same considerations which disposed of space may be urged against any systematic relations, whether of the real world to anything outside itself or of elements in the real world to one another. We may then proceed to develop Plato's argument thus. To remain unchanged means to remain "in the same relations." But we have already seen that the real cannot be in *any* relations. *Ergo*, etc.

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unity to be relative to some other term and different from it. Hence if the supreme unity be different from anything else, it is not in its own right and of its own inmost nature that it has this quality of difference (*τῷ μὲν ἄρα ἓν εἶναι οὐκ ἔσται ἕτερον...ἀλλὰ μὴν εἰ μὴ τούτῳ οὐχ ἑαυτῷ ἔσται, εἰ δὲ μὴ αὐτῷ οὐδὲ αὐτό*) and therefore (as there can be no distinction within what is merely unitary between essential and unessential elements), the One is not in any way different from anything else. Neither is it really self-identical. For unity and identity are not the same thing: if both are predicable of reality they must be recognised as *different* aspects of it; its unity will be one thing and its identity another, and consequently the self-identical One will contain an element of diversity. But this is just what our hypothesis forbids us to admit. *Identity* and *difference* must therefore both be surrendered. *Likeness* and *unlikeness* must now of course share the same fate. For likeness is partial identity (*τὸ ταὐτὸν πεπονθός που ὅμοιον*), and we have already found that to admit identity into the intelligible world is to admit diversity along with it. Similarly the argument which proved fatal to difference forces us to exclude *unlikeness*. The same reasoning may be extended to any attempt to determine reality by *quantitative* predicates. It can neither be *equal to*, *greater*, nor *less* than itself or anything else. For equality is a special form of identity, viz., identity in respect of *quantity*, and must therefore share the fate of identity in general. And any "more" or "less" when thought out implies parts. That is greater than something else which contains a greater number of equal parts; that smaller which contains fewer. Hence neither predicate can be applied to that which is *ex hypothesi* perfectly simple and indivisible. And thus quantitative distinctions have followed qualitative.

Lastly, can our One stand in any *temporal* relation whether of succession or of simultaneity? In principle these relations have been condemned already. For *simultaneity* is a new form of identity and, like all identity, cannot exist apart from diversity, while *priority* or *posteriority* is, in the same way, only another kind of difference or unlikeness. The one real is therefore neither before, nor after, nor together with itself or anything else. It follows that it has no existence in time at all. For whatever has duration in time may be said at any moment to involve three different relations. At each successive moment it is becoming posterior and therefore, by the same process, prior to itself, while it is of course throughout the whole time simultaneous with itself. And all these three relations have just been denied of the real. The real

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is in consequence absolutely apart from time. Therefore—and this leads us at once to the paradoxical result of our hypothesis—it neither has been, is, nor will be, has become, is becoming nor will become. But what never has been and never will be is obviously destitute of all reality. The One therefore is absolutely *unreal*, and consequently is not even *one*: if it were, it would thus have some degree of reality. And finally, as there can be no possible points of contact between the real, and the utterly unreal, the One cannot be made the subject of speech, perception, belief or knowledge. It is unknowable, for the very best of reasons,—that it is only another name for nothing. Such is the necessary but altogether unbelievable consequence of our original supposition.

Thus the first of the Parmenidean hypotheses ends with the disproof of the very assumption with which it had set out. And the disproof has been perfectly serious and perfectly valid. Our impossible result has been due not to any skilful sophistry or ingenious quibbling in the argument, but to the secret error involved in the premiss from which we started. That premiss was that the intelligible or real world was a unity, and—as we tacitly added—a unity from which diversity is altogether excluded. And the irony of the Platonic method has consisted in turning this false assumption against itself. At each step of the argument the assumed incompatibility of unity with diversity has been recurred to to establish two opposite sets of conclusions. It has first been applied in principle much as the historical Eleatics or Megarians might have applied it, to show the absurdity of all predicates which openly ascribe multiplicity to the real world, and then in immediate succession to prove the equal inconceivability of those opposite determinations by which the Eleatics and their successors have sought to express their conviction of the world's unchanging self-sameness. Eleatic and Atomist, Megarian and Sensationalist are thus concluded in one common unbelief. The determination to take unity by itself as the absolutely real, and whatever is other than unity as simply unreal, has been found to lead to the complete severance of the world of appearance from the world of reality, and next and through this severance to the abolition of the latter world itself. Step by step, every predicate with which the Eleatic and the Megarian have invested the world of reality has been handed over to the world of mere appearance, till finally, on the unimpeachable principle that what has no qualities and produces no effects is nothing, its very existence has been pronounced to be illusion and mistake. There is nothing to know—such is the result to which we have been forced—and

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you can know nothing about it. Such a result, I need not say, would be the death-warrant of all science, and it is not surprising that both Parmenides and his respondent refuse to accept it (*ἦ δυνατὸν οὖν περὶ τὸ ἓν ταῦθ' οὕτως ἔχειν; οὔκουν ἔμοιγε δοκεῖ* 142 A). They are thus compelled to retrace their steps and once more to investigate the consequences which flow from the admission that the world is a unity, and this bring us to the second of the nine hypotheses.

The second hypothesis (142 B—155 E) is the longest and by far the most intricate and difficult piece of argumentation in the dialogue, and will necessarily give us some trouble before we have done with it. Fortunately however, whatever may be its difficulties in detail, there can be no doubt about the general point of view by which it is distinguished from the preceding hypothesis. Plato does not, like the writer of a set Handbook to Metaphysics, stop to point out in so many words what was the flaw in our first crude conception of the world's unity, and in what way that conception is to be emended, but the first steps of the renewed discussion of themselves indicate the change in standpoint with perfect clearness. We started before with the hypothesis "*Reality is unity*"; we are now to start from "*Unity is real.*" In the first case unity was taken as the sole predicate of a reality not otherwise definable; it is now to be taken, grammatically as the subject of an existential judgment, logically as one predicate among others of a reality which is not identical with itself. And this difference of starting-point leads to a similar difference in procedure. We began before by assuming that we knew already exactly what kind of unity the world possesses, and we then went on to rule out of the real world whatever predicates refused to combine with it: we shall now more modestly and philosophically begin by reminding ourselves that the unity of which we are in search must before all things be compatible with the general nature and universal conditions of real existence, and we shall go on to see what qualifications and restrictions this general nature of reality imposes upon it. What is one cannot be anything else but one was the axiom of our first hypothesis; what is one must nevertheless be real will be the axiom of the second. The consequence of this change of attitude, as we are now to see at large, will be that, whereas previously all predicates were excluded from reality, all will now be, in various senses and different relations, attached to it. In proceeding to paraphrase the reasoning by which Plato seeks to establish this important result, I am bound to warn the reader that while the general drift of the lengthy argument is to my mind unmistakeable,

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I do not by any means feel the same confidence in my own interpretation of all the details; in particular, in several places, to which I shall call attention in the course of my exposition, I can hardly profess to have done more than hazard a tolerable guess at Plato's meaning.

We start then from the assumption "unity is real." This judgment, like all other judgments, is more than a mere identity. "Unity is real" is not simply another way of saying "unity is unity." Unity and reality then are not merely identical; they are complementary aspects of the full reality. And if "unity" and "reality" are distinguishable aspects within a whole, then the whole will be that "real unity" of which both are predicable, and either aspect may be called a "part" of the whole. Thus if the ultimate unity be also real it can only be in the form of a whole within which aspects which are distinct nevertheless come together. These aspects or "parts," as Plato calls them, are in the widest sense two,—the ideal unity, or as we may say, if we will carefully keep the notion of conscious teleology out of our heads, the *plan* of the world, and the *reality* in which that plan is carried out. And within each of these aspects of the single reality when examined in abstraction from the other the same division repeats itself (142 E). The "unity" and the "reality" alike contain both of the same twin aspects which constitute the whole. That is, I suppose, the "system" or "plan" which we set on one side as one of the two interacting factors turns out to be a "system of systems," while the "material" in which it is realised has to be thought of as already organised into a variety of subordinate systems. And this process of subdivision has no perceptible limits. However far you carry the distinction of "form" and "matter," or "reality" and "ideality," you never come across any element of reality which does not involve both. Thus, as Plato says, whatever "part" you take of reality you always find these same two "parts" within it, and the original unity, just because it must be real, must also exist in the form of an indefinite plurality or multiplicity of "parts" (143 A). Again, just as we have shewn that a real unity presupposes parts, we may by the same methods of reasoning show that the "unity" even taken in abstraction from the reality presupposes a plurality of numbers. For, taking them merely as abstract determinations of thought without any reference to the concrete character of the whole which they constitute, unity is other than reality and reality than unity. Hence arises a third abstract thought-determination, "difference," which is not identical with either of the two former (143 B). These abstract forms of thought, like

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everything else which is capable of distinction, lend themselves to the process of *counting*: we get "unity," one, "reality," two, "diversity," three: or "diversity," one, "unity," two, "reality," three, and so on. Thus a mind—it is in this way I understand Plato's rather minute argumentation—which can form the thought of "one" and distinguish it from other thoughts is at once driven forward, even if it has nothing but its own abstractions to count, to form the ideas "two" and "three." And from two and three, the first even and the first odd number, can be derived by successive multiplication the whole numerical series (144 A) which is, of course, unlimited[1].

Thus the admission of unity as a determination of the real brings with it the equal admission of the whole numerical series which arises logically from it. Reality is thus so far from being a mere self-identical unit that it is shared among an indefinite number of subjects, and is present in everything that has any kind of existence, be it great or small (144 B). We might indeed have reached this conclusion more directly, for there is a patent absurdity in the notion that anything that has existence should be completely devoid of reality. Reality is thus manifestly cut up and sundered into a perfectly unlimited number of different "parts" or "aspects," and is so far from being merely a unit that we may say there is nothing else so hopelessly torn by internal divisions (*πλεῖστα τὰ μέρη αὐτῆς*)—except indeed unity itself, the case of which is equally desperate. For each "part" of reality so long as it exists is *one* definite part; otherwise we should have parts which were yet no parts and things which were nothing. Thus for every division in the internal constitution of reality there is a corresponding rent in its unity. Each and every part is a unit and yet the whole so constituted is a unit also. We have seen *τὸ ἕν*—if I may indulge in a slightly fantastic metaphor—already producing the whole infinite numerical series out of its own bowels; we now find it begetting by fission an innumerable multitude of lesser ones, each of which seems as much a unit as itself. So (144 E) unity is compelled by its conjunction with reality to disappear in an infinity of fractions. This brings us to the first of the conclusions which we are entitled to draw from the conception of the world as a unity. "*Not only is reality many, but unity itself from its connection with reality necessarily divides up and becomes a plurality.*"

[1] Plato has overlooked or omitted the case of "prime" numbers, which are neither *περιττὰ ἀρτιάκις* nor *ἀρτιὰ περιττάκις* nor *περιττὰ περιττάκις* and can only be formed from 2 and 3 by addition. The omission does not in any way affect the principle of the argument.

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Being now perfectly clear on this fundamental point, we may make the attempt once more to vindicate for reality the various classes of predicates which the repeated application of the principle that unity is incompatible with diversity compelled us successively to surrender. We begin as before with relations of a spatial character. The world of reality, being, as we have seen, a system of parts forming a single whole, must be "*limited*" or "*finite*," in the sense that the parts are contained within, and completely determined in every way by, the general character of the whole. We may speak therefore of the whole as "limiting," or quite literally "determining," its subordinate parts, and we have to add to the statement that reality is numerically infinite the correction that it is also finite. But, proceeds Plato, if finite it has boundaries, and, as a whole, it has beginning, middle, and end, of which the second is equidistant from the first and third. *It can therefore have the spatial qualifications of extension and figure.* In judging of the value of this argument we must take care to keep in mind the peculiar nature of metaphysical proof. There can of course be no such thing as an *à priori* demonstration that reality must appear in a spatial form and in no other, If our ordinary experience did not make us acquainted with the fact that reality does appear in such a form, we certainly could not have made the discovery for ourselves. All we can do is, now that we have learned from experience that things do appear as in space, to ascertain what are the leading characteristics of spatial existence, and convince ourselves that they are not inconsistent with the general nature of the reality which we suppose to underlie all appearances. And this is the character of the reasoning in the present passage.

It is shown that the unity of the world is not merely consistent with diversity, but actually demands for the manifestation of itself a concurrent diversity which is combined into a definitely ordered system; and such systematic relations are familiar to us, among other forms, in the shape of figure and extension in space. There is therefore nothing in the character of spatial relations incompatible with their being a mode of the appearance of what is ultimately the single reality. We are not bound in the interests of our belief in the fundamental unity of the real to treat the spatially extended as simply unreal, and we may therefore accept it on the authority of experience as one aspect among others of reality. Thus understood, as a defence of the partial reality of the spatial world against the objections of the first hypothesis, the argument will, I think, be found to be sound. It is of course possible that Plato looked upon it as being more than

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this: the very vagueness and allusiveness of the terms employed in the reasoning, *πέρας*, *ἔσχατα*, etc, give it a spurious appearance of being just such a direct deduction of spatial relations from the general nature of the Absolute as we have called impossible.

From spatial relations we proceed to all those other leading characteristics of the world of actual experience which our first hypothesis banished one by one from the world of reality. (1) The one reality is *self-contained*. For each and all of the parts or aspects of the whole are contained by the whole without exception. And the whole which contains them all contains them without excess as without defect: for there is nothing in the world but what is in the parts. Thus when we say that the whole contains the parts we are saying that one and the same reality appears both as what contains and as what is contained: we are ascribing to it a permanent *self-containedness*. (2) And yet the one reality is *outside itself*. For though the parts are contained in the whole we must not say that the whole is contained in the parts. For if it is in all together it must be in each separately; while just because it is the whole it cannot be in each single part nor in any number short of the total. It is therefore, from this point of view, not self-contained, and as that which is nowhere is nothing, must be permanently outside itself and appear in a foreign medium (*ἐν ἄλλῳ*)[1]. We may therefore restore to the list of predicates which are true of the real both (3) permanent *rest* or *changelessness* and (4) perpetual *change* or *motion*. For in so far as the one reality remains always self-contained and self-identical it is for ever free from every form of change and disturbance, and is thus always at rest; while in so far as it is never self-contained but always manifests itself in a foreign medium it is always undergoing change. Thus the second point which we have reached is the affirmation about reality in one sense and the denial in another of the most prominent characteristics of the perceived world: reality both is and is not self-contained, is always and is never at rest or in motion. (146 A.)

Of all the reasonings of Parmenides in this hypothesis the latter part of the present argument is perhaps that of which it is the most difficult to perceive the exact meaning and force. Two points call for special remark.

(1) With what warrant is it assumed that the whole cannot be contained in all its parts taken collectively unless it is also

[1] The *ἄλλο* in which *τὸ ἕν* appears is of course the same as the *ἄλλα* which are called its "parts." This is made certain by comparison of 140 E with the repeated statement of 151 A and 159 B that *τὸ ἕν* and *τὰ ἄλλα* between them exhaust the content of existence.

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contained in each severally? Not merely is no proof offered of this assertion, but it seems on reflection of very doubtful truth. No conception is more familiar to us than that of a whole which is the sum of its parts: in geometry and still more in arithmetic the wholes with which we deal are entirely of this kind, and it certainly seems as if the principle which Plato here assumes as self-evident would, if accepted, make the latter science impossible. For it would at once dispose of all equations in which a total obtained by addition or multiplication is substituted for the sum or product of its factors. 12=7+5 we believe to be true, and yet it is certain that 12 = 5 or 12 = 7 is false, though on Plato's principle either all three judgments should be true or all three false. (2) And further in the argument from the externality to self of reality to its perpetual motion is there not a subtle subreption? All that the foregoing proof, even if we overlook our misgivings about its premisses, establishes, is that the one reality somehow exists "ἐν ἄλλῳ." But when Plato undertakes to deduce from this the perpetual motion of the real he substitutes for the words ἐν ἄλλῳ εἶναι the words ἀεὶ ἐν ἑτέρῳ εἶναι, where the inserted ἀεί seems by the changed shade of meaning it gives to the ἕτερον to bear the whole weight of the inference. For the ἄλλο in which τὸ ἕν appears might for all that we know to the contrary itself be something fixed and unchanging: the addition of the ἀεί creates a grammatical ambiguity which secretly introduces into the premisses the very notion which we are seeking to infer from them. To these serious objections I can only offer the following rejoinder for what it is worth.

(1) The principle that if a whole be contained in its parts taken all together it must be in each severally is certainly not universally true. In the case of numerical, and to a less degree of geometrical, wholes it is distinctly false. For the special character of a numerical, as distinguished from any other kind of whole, is that it is simply the *sum* of its component parts taken in any order you please, and nothing more. The relation by which the parts are formed into the whole is simply one of juxtaposition. And—with the added restriction that in this case the parts must be combined in a particular order—the same is true of geometrical wholes. The principle becomes valid however if we make, as I suppose Plato must be making, the tacit assumption that the unity that reality possesses is not that of mere juxtaposition in space, but is rather analogous to an all-pervading plan or system in accordance with which the behaviour of any subordinate part of the whole is determined. If this be the case it is clear that though the single plan of the whole contains no element which is not supplied by its parts,

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yet the whole itself is something more than the sum of the parts. We may illustrate this by reference to any elaborate mechanical system, as *e.g.* the works of a watch. The unity which in this instance pervades the whole is that of a definite plan to the realisation of which each part of the whole has to contribute its share. And it is manifest that while there is no single part of the work to be done which is not performed by some one particular cog or wheel, no mere summation of the separate wheels will give you the whole. For even if by some lucky chance you arrange the separate parts in their proper order, you have still not got the whole: you do not arrive at that until you have set the machinery to work so as to produce the realisation of a plan or idea which is not contained in its fulness in any of the parts nor in any stationary arrangement of them all. Thus of all such wholes as consist in the realisation, by means of the working of subordinate parts, of a general plan or idea it is true to say that, while the whole contains the parts, the parts as such do not contain the whole. It "transcends" them as well as "inheres in" them.

(2) With regard to the second difficulty, I would recall what I have already said about the peculiar character of metaphysical proof. The existence of motion can no more be demonstrated from general principles than that of space. All we can do is to show, against negative criticisms, that the prominent peculiarities of motion are not such as to conflict absolutely with the kind of unity which it is reasonable to ascribe to reality. If we can do this we are entitled to conclude that there is no reason why motion should not attach in some way, as a partial appearance, to a reality which is at the same time one and self-identical. And so much at least follows, I think, from the admission that the one reality does in any case manifest itself in a medium external and foreign to itself. If it can thus disguise its unity sufficiently to appear as a vast plurality of more or less independent parts, what right have we to set any limits to its powers of masquerading? And so we may perhaps admit that Plato's argument is independent of the surreptitiously introduced *ἀεί*. At the same time, one cannot help feeling that the ambiguity created by the *ἀεί* may have served, like the ambiguity of the *που* and *ἔν τινι* in the previous case of extension, to give the argument for Plato the delusive appearance of a rigid deduction of phenomena from first principles.

We proceed now from the two prominent features of the visible world, extension and motion, to the most general of qualitative relations—identity, difference, likeness, unlikeness. We may assert one of two, or at any rate one of three, relations

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about any two subjects we please. Either they are the same, or they are different, or lastly, in the case where we can predicate neither of these relations, one of the things stands to the other in the relation of part to whole. Two of these relations may at once be denied of the One. It is not a part of itself, and it is not anything different from itself. Only one possibility remains. The One is identical with itself. But yet again we have seen that the "One" or reality is in some sense "outside itself," (ἑτέρωθι ἑαυτοῦ) while yet in another sense it is self-contained. And as these two aspects are different it must be true to say that the same reality as existing "outside itself" is different from itself as self-contained. *Thus the real is both identical with and different from itself.* Again there must be a difference between unity and whatever is not unity. Unity or the One is therefore different from the multiplicity which exists side by side with it. And from this, on the principle that identity and difference are irreconcileable, we might be inclined to deny that τὸ ἕν can be in any sense the same as τὰ ἄλλα. But we may see that the attempt to carry our own assumption to its logical conclusion would yield the opposite result. This is proved as follows. Identity and difference are, we say, absolutely irreconcileable. But it follows at once that difference cannot have any place in the world. For if difference persist even for a moment, then for that space of time it has proved itself compatible with the continued identity of the subject in which it exists, and thus τὸ ἕτερον has existed for the time being ἐν ταὐτῷ[1]. From the alleged incompatibility of identity and difference it follows therefore that difference can exist neither in the One nor in the Many. And as they cannot be different in virtue of a mere act of "position" without presenting definite points of distinction, (so we may paraphrase οὐδὲ μὴν ἑαυτοῖς γε ἕτερ' ἂν εἴη ἀλλήλων μὴ μετέχοντα τοῦ ἑτέρου) they simply do not differ from one another. And further on our own principle that what is different cannot be in any way identical we must not conceive

[1] This argument reads to us very like a sophism. Nothing is more obvious than that it only proves that if a thing *A* exist at all it must at any moment be identical with and different from itself at any other moment of its existence. It has not proved what we want, viz., that *A* cannot be different from *B* which coexists with it without also being in some way *identical with B*. To us it seems self-evident that *A*'s identity with *A* does not in any way conflict with its difference from *B*, nor help in the least to establish its identity with *B*. But this conception of an *A* which has opposite predicates according as it stands in relation with different things is just what the believers in such a unity as Plato is refuting refuse to entertain. Their position is this. Either *A* is identical or it is different, and they will not allow you to say, "It is *both*—it is identical with *A* and different from *B*." So that against *them* the argument holds good.

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of the Many as a *number* of units: that would be to ascribe to the manifold the very unity we wish to deny of it. So that the One is not related to the Many as part to whole (147 A). Nor yet as whole to part for the same reason. But we have previously decided that if two things are neither different nor yet related as whole and part they are the same. Thus the very attempt to be logical in our assertion of the absolute difference between unity and multiplicity leads to their absolute identity. Thus, summing up, the one reality is at once identical with and different from itself and the manifold it presupposes. Or, as we may expand the statement, what is real is a single whole which nevertheless appears as a multiplicity of parts, and it contains nothing but the parts, while it is not any one of them nor all of them taken together.

From the establishment of relations of identity and difference between the One and itself and other things we can now go on to establish those of likeness and unlikeness. For, Plato argues, (147 C–148 A) the very fact that the One and the many are different implies that they are also alike. You say not only "the One is different from the Many," but also "the Many are different from the One," and the difference referred to in the two judgments is one and the same. The same identical quality has appeared twice over, once as a predicate of the One and again as a predicate of the Many (147 D–E); and things which have an identical predicate (*τό που ταὐτὸν πεπονθός* 148 A) are called "like." Thus just in so far as the One and the Many are different they are also alike. The conclusion is of course sound, but the reasoning is, I fear, more than doubtful. It seems hardly permissible to treat a relation between *A* and *B* as if it were a mere adjective which could be attached to either term by itself at pleasure, and then to postulate a new relation founded on the presence in both *A* and *B* of this same adjective. Even ordinary language recoils from such an attempt to make the relations "inhere in" their terms in this way, and takes refuge in the ambiguous word "between." (See Bradley, *Appearance and Reality*, p. 32, footnote.) But in the *Parmenides* relation and quality are only beginning to be distinguished from one another.

To return to Plato's argument. The One is once more not only like but also unlike the Many. For, as we have seen, it is not only different from but also identical with them. And since difference implied likeness, identity being the contrary of difference will imply the opposite relation of unlikeness. And yet again we may reverse this result. For in so far as two things are of identical quality (*ταὐτὸ πέπονθεν*), their quality does not differ, and they are therefore not unlike but like, while in so far

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as two things have different qualities they are unlike (148 C). Thus both the identity of the single reality with a multiplicity and its difference from it imply the double relation of likeness and unlikeness. And since we have seen that reality is both identical with and different from itself it must stand to itself also in the same complicated relations. *So that it is both like and unlike itself and its opposite.*

Parmenides next asks (148 D) does the One stand or does it not stand in relations of *contact* with itself and with the plurality it implies? It is impossible to say how far the spatial language of the following argument (ἅπτεσθαι, χώρα, ἐφεξῆς) is literal or how far it may be simply metaphorical. How little violence would be done to such language by taking it as in the main symbolical we shall easily see if we reflect on the extent to which, even in English, we have to employ such terms as "aspect," "thread of connection," "points of contact," to denote relations of an entirely non-spatial kind. And I think we may say that Plato's reasoning, while ostensibly confined to spatial contact, will apply with equal force to any conception of the mutual interrelation of reality and its various "parts." Inasmuch as the whole is self-contained we may speak of it as "in contact" with itself; and, again, inasmuch as it is contained, as we have already learned, in what is not itself (ἐν ἄλλῳ) it will again be in various relations of "contact" with this multiplicity which contains it (148 E). So too we cannot avoid sometimes distinguishing, or seeming to distinguish, between the single unity of the world-plan and the multiplicity in which it is carried out, and we then say, in more modern but equally spatial phraseology, that the general scheme of the whole assigns to the particulars their proper places, or, again, that the particular is what it is in virtue of its manifold connection with the whole.

But, on the other hand, such expressions are not true without qualification. For contact (148 E) only takes place between two bodies which occupy adjacent places. And reality is *one* and not two; and since it cannot become two there is no second reality for it to be in contact with: it cannot therefore strictly be said to be in contact *with itself*. Nor yet with its complement and opposite. For one act of contact is only possible between two definite points, two contacts between three points, and so on. Contact in general, that is, is only possible at definite points, and the plurality which we think of as the counterpart of unity must not even be taken to present a number of definite distinguishable points. For to make that plurality into a definite number of units is to introduce into it the conception of unity. Considered in ab-

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straction from unity, as its complement and opposite, it can only be thought of as a vague and as yet undetermined *Mehrheit*, (cf. the relations between the ἄπειρον and the πέρας at 158 D and in the *Philebus*) which presents no definite points at which the One may enter into contact with it. Thus the one reality *not only is but also is not in "contact" with itself and with its inherent multiplicity.* To revert to our former illustration from modern phraseology, we can easily see that reality, strictly speaking, cannot enter into relations with itself, and when we talk as if it could we are making a necessary but ultimately untenable distinction. For ultimately the whole which, as we say, assigns their "places" to the "parts" and the "parts" themselves are one and the same single reality. There are thus ultimately not the two terms which are essential to "contact" or "relation." And clearly reality can stand in no relations to what is beyond it and so merely unreal.

We must now turn from the most universal qualitative to the most general quantitative predicates. We are to see that the One is, according to the way in which you look at it, alike capable and incapable of the various relations of equality and inequality with itself and its opposite (149 D—151 E). The reasoning, which is unfortunately far from being cogent, proceeds thus. Here, as in previous cases, we begin by pointing out that if the One enters into these relations it cannot be in virtue of an act of mere "position" (*οὐκ ἂν τῷ μὲν ἓν εἶναι κ.τ.λ.*) We shall once more have to distinguish the "unity" of the One and the "plurality" of its counterpart, which constitute their inmost essence, from the non-essential "greatness" and "smallness" which we predicate of them. Or, in the familiar Platonic phraseology, if these predicates of "greatness" and "smallness" are to attach to reality in any way, we must be able to affirm the real existence of two Forms or Ideas, "greatness" and "smallness," by "possession" of which reality is entitled to be called "great" or "small." Very well; but if "smallness" is present in the One at all, it must qualify either a part or the whole of it. But "smallness" cannot attach to reality *as a whole*, for in that case it is either equal in extent to it or extends beyond it. The "small" will either be another name for the one reality or it will be something still more comprehensive. Either supposition is absurd: the "small" is that which is smaller than, not that which is equal to or greater than something else. Thus this "smallness" is not a predicate by which you can qualify reality as a whole. And the same reasoning holds good of any subordinate part of reality you choose to consider. Smallness there-

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fore is not a quality of reality as a whole nor of any part of it taken by itself, and nothing can be truly called "small" except the abstraction "smallness" itself. And of course with the disappearance of "smallness" its correlate "greatness" also vanishes. Thus reality and its parts cannot be said to be greater or smaller than each other, nor can any such relation subsist between reality and the abstractions "smallness" and "greatness" themselves; for they, in virtue of the principle invoked by Parmenides at 133 C, are relative only to one another. But when one of two things is neither greater nor smaller than the other, neither exceeds it nor falls short of it, they stand in the relation of equality and are called equal. The one reality will therefore be *equal* both to itself and to its parts (150 E). Yet this conclusion is not the whole truth; for, as we have already seen, reality is self-contained; we may then once more distinguish between reality as containing and the same reality as contained, and we may say that the one reality is at once *greater and less* than itself. Or, perhaps one might expand this result; we are driven on the one hand to take reality as = the whole contents of the world-plan, while on the other doubts arise as to whether what is past and what is still to come are not *unreal*; there can be nothing unreal in the one reality, and yet, unless becoming is a mere empty delusion, there seem to be parts of it which are no longer or are not yet fully real.

This conclusion is still more manifestly what Plato has in his mind as he proceeds to describe the relation of τὸ ἕν to τὰ ἄλλα. What is nowhere, he continues, is nothing; what *is* and is real must manifest its reality at some definite point—must, as he phrases it, be "in something." And as there is no third reality over and above the One and its counterpart the Many, the One and the Many must "be in" one another. The One, that is, is only real so far as it realises itself by appearing in the plurality, the Many only real in so far as they are the appearance of the One. And in so far as you speak of the One appearing "in" the Many, it would seem to be less than they, while, in so far as the Many only exist in the One, they appear to be less than it. Or, to revert to our expansion of the argument, in so far as reality is only that which makes itself felt as *present* reality, there are past and future elements of existence which we must call unreal; but, in so far as the ultimate reality is an indivisible whole, what is present reality at any moment falls far short of being the whole reality. Thus, in conclusion, in one sense or another, all three relations of equality, excess and defect can be asserted—or denied—to hold good between the One and the

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many (151 B). The extension of the argument from merely quantitative to definitely *numerical* predicates follows naturally, and we need not stop to consider it in detail. On the latter or affirmative part of this piece of reasoning it is not perhaps necessary to make any remark; my paraphrase has already sufficiently explained what seems to be the general sense of it. The negative argumentation however is of so peculiar a character that it must not be passed without a word of comment. I have already called attention to the important point that Parmenides begins his argument at 149 E by asserting that "greatness" and "smallness" can only belong to a subject in virtue of its participation in the corresponding "Form"—a coincidence between the teaching of our dialogue and that of the *Phaedo* which shows how far Plato was when he wrote the *Parmenides* from entertaining that objection to "Ideas of relations" which is shared with Aristotle by several modern scholars. The reasoning which is based upon this principle is unfortunately more open to criticism than the principle itself, which has only been decried when it has been first misunderstood. It is easy, of course, to see that Plato's general contention is perfectly correct. If you treat a *relation* such as that of "more and less" which can only exist between two terms as if it were a *quality* that could attach to either term taken by itself you are led to illegitimate or absurd results[1]; and it is quite certain that "res absolute in se spectatae" are neither great nor small. But Plato does not seem to be at all adequately aware of the monstrous character of the confusion in question, and here, as once before in the *Parmenides*, and frequently enough in other dialogues, we have painful evidence that he had not the advantage of writing with Aristotle's table of categories before him, and that the difference between a "quality" and a "relation" was by no means clearly fixed in his mind. Hence, side by side with antitheses both the positive and the negative parts of which are of high importance for a true understanding of the world, we have, in the present case, one of which the negative half contains so little truth that is hardly worth calling a truism and might easily be mistaken for a sophism. And still more serious objections, which are too obvious to need pointing out, can be brought against the inference that whenever two things do not stand in the relation of "more and less" they are equal.

We come now (151 E–155 D) to the final step in the long and intricate argument of the second hypothesis. It will be

[1] We found Plato himself making a similar blunder at 147 D, E.

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remembered that the result which was immediately fatal to the reality of τὸ ἕν in the first hypothesis was its failure to appear in the time series. For, though a thing might conceivably be real without possessing some of the other predicates which have been canvassed, it seems only too manifest that what never succeeds in making its presence felt is, at least for us and for any philosophy we can create, nothing at all. Hence the climax of the procedure by which we have laboriously vindicated for reality the various predicates of the actual world will be our proof, if we are able to give one, that the unity of the real is compatible with the conflicting determinations to which all that appears in time is, as we have seen, liable. We begin our demonstration with the temporal relations of the real One to itself taken as a whole. And first as to the main point, the possibility of time predicates in general. Once more we remind ourselves of our original starting-point, which was that the ultimate reality—whatever it is not—is something *real*. And we once more have recourse to a principle which has served us well already—that that cannot be real which does not appear as *present* reality. To *be* real (151 E–152 A) is to be real in the *present*, just as *to have been* real means to have *once* been present reality. Hence, from the reality of the One, we can conclude at once that it must make itself felt in a *present*, and thus appear in *time*. And if it appears continuously in time the real must be constantly becoming posterior and consequently also prior to itself. And becoming is only thinkable as a constant transition out of the present into a future which is not as yet present. And so, at any moment at which we choose to think of this process as arrested, we may say that the One not only is becoming but has become and actually *is* both prior and posterior to itself. But again the various present moments taken together make up the whole period of the One's existence, and consequently we may say that throughout its whole existence it is perpetually in this double relation of priority and posteriority to itself. While lastly, taking the whole period of its existence as one eternal present, we may say with equal truth that it neither becomes nor is prior nor posterior to, but is for ever simultaneous with, itself. Again, with reference to the relation between the one reality and its parts, we may make similar judgments. For the one reality is a unity and its parts a multiplicity. And on the principle that the simple is prior to the complex, we must hold that the one reality is prior to the manifold in which it appears. But yet again the plurality is a plurality of *parts* of the one real, and the whole reality therefore seems not to exist until all its parts—beginning middle and end—have successively become real, and thus

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it would appear that the Many are once more prior to the One. Lastly, as we are now convinced, each of the many parts is itself a unity, and thus each involves that systematic character which is distinctive of the One; so that the One and the Many are simultaneous. Summing up then, the One stands not only to itself but also to the Many in all three relations of simultaneity, priority, and succession. In like manner we may say of what we call the Uniformity of Nature that while its previous existence must be presupposed in every attempt to explain any set of facts, so long as there remain any facts to come it seems not to be fully realised, while yet we cannot resist the conclusion that ultimately it and it alone is the one ever-present reality. Here the consideration of the temporal relations of τὸ ἕν might profitably end, but Plato goes on in the spirit of paradox to develop a further set of contradictions which are entirely without metaphysical significance and are only reached by manifest sophistry. We have seen that the One both *is* and *is not* prior and posterior to the Many; can we say that it always and never is *becoming* prior and posterior to them? The arguments which are produced to justify a conclusion on this point are almost untranslateable and turn on a mere quibble or equivocation about the meaning of the words πρεσβύτερον and νεώτερον. Hitherto these terms have been used simply in the sense of prior or posterior; Plato now takes them literally as = "older" and "younger," and moreover—with an ambiguity which can hardly be unconscious—understands νεώτερον γίγνεσθαι at one time to mean a reduction of the actual interval by which one person or thing is said to be "older" than another, at another the diminution of the proportion between this interval and the whole "age" of the persons or things in question. In the former sense it is clear that neither τὸ ἕν nor anything else can ever become "younger" or "older" than that with which you compare it. What is once "older" or "younger" than something else by a given quantity of time—say, two years—will always be "older" or "younger" by just that same interval. Thus we may say that, as we have shown, the One *is*, and *has* become, but never that it *is becoming* "older" or "younger" than its many parts. And yet, on the other hand, as time goes on, the interval in age between two things is perpetually growing less, relative to their whole duration. A man of sixty, Plato perhaps reflected, can hardly be said, for any but the most superficial purposes, to be as much older than a man of fifty as a youth of twenty is older than a child of ten. Thus we may say that the older of two things is always growing younger with respect to the other and the younger older, and this process

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though never ceasing never exhausts itself; the interval however much reduced never vanishes. Hence, as we have shown that either the One or the Many may at pleasure be regarded as prior to the other, we may say of both that each is perpetually becoming, though it never finally becomes, at once "younger" and "older" than the other (155 C), and with this problematic result our investigation of the puzzling relations of the one reality to its parts in time comes to an end.

Finally, it only remains to draw the formal conclusion from the appearance of reality in the time series. As so appearing it can be qualified by all the determinations "is," "was," "has been," "will be." And each of these time-determinations can be combined with the attribution to it of all sorts of qualities and relations (*εἴη ἄν τι ἐκείνῳ καὶ ἐκείνου*). So that the way is open for the reference to the one reality of all the varied judgments as to what is, has been, or will be, which make up the body of our knowledge. And indeed the very fact of our being able to make it the subject of our present discourse and thought etc. (155 D) shows that it is accessible to knowledge, opinion, and even to *sense-perception*. (*ἐπιστήμη δὴ εἴη ἂν αὐτοῦ καὶ δόξα καὶ αἴσθησις.*) So, reversing in every detail our first result, we add it can have and actually has theories formed about it and a name bestowed on it: and, in short, whatever is true of any object of knowledge *quà* object of knowledge is also true about the Supreme Reality. (*ὅσαπερ καὶ περὶ τἆλλα τῶν τοιούτων τυγχάνει ὄντα καὶ περὶ τὸ ἕν ἐστι.*)

Thus the nett result of the long and complicated reasoning of 142 B–155 E is this: that if we once start with the conviction that the ultimate reality must at least be real we are driven so to conceive of its unity as to permit the recognition of all the diversity of the actual world as falling somehow within it. Every affirmation and every negation that can significantly be made about anything in the world will come in the end to be a partial statement of the nature of the single and ultimate reality. Judgments which assert the world's unity or its diversity, which attach to it spatial, temporal, qualitative and quantitative relations of the most various kinds will all have their own truth, while none will be the whole truth. This last qualification is added advisedly; it seems to me to be the main if not the only function of the negative side of the successive contradictions of the argument to remind us that every assertion we can make about the real on the strength of our experience is, though true, only a part of the truth. And I hope I am not reading modern notions into Plato when I say that I find the underlying idea of the whole in the conception

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of a reality which, while it can only be real because it realises itself in the details of experience, is never fully realised in any of them. I shall recur to this conception later on. Meanwhile there remain two points, both of some importance, to which I would call attention before finally leaving the hypothesis over which we have delayed so long. The first point is one to which I have already devoted a few remarks, the entire absence of anything like Hegelianism from the antitheses of Parmenides. What I have already said on this subject is, I think, fully borne out by the argumentation we have passed in review. We have, it is true, been presented with a series of antitheses each side of which has been equally asserted as true; but there has been no attempt either to present inner contradiction as characteristic of every conception nor, which is the special property of Hegel, to treat the various categories under which we think of the real as begotten out of one another by the attempt to reconcile this contradiction. We have, indeed, in the case of the conceptions of unity and sameness had a demonstration that each directly presupposes its own opposite, but in the remaining cases Plato has been content with simply proving first one side and then the other of the contradiction by supplying on each occasion the conditions under which the judgment holds good, without any attempt to make the one side of the antithesis arise, by a dialectical necessity, from the other; while in more than one case, notably in that of the puzzles connected with time, the antithesis combines elements which have real philosophical significance with others which are little better than quibbles. (Compare also my abstract of the next hypothesis.)

The second point to which I would call attention is to my mind of much greater importance. We saw that Plato in concluding the argument at 155 D asserts that *τὸ ἕν*, the supreme reality, can be the object not only of full and adequate knowledge but even of opinion and sense-perception. The bearing of this passage on certain views both ancient and modern is obvious. Taken in connection with the attack on the absolute separation of *γένεσις* and *οὐσία* in the *Sophistes* and *Theaetetus* (*Soph.* 248 ff., *Theaetet.* 155 E), and the conception of *γεγενημένη οὐσία* in the *Philebus* it forms perhaps the most decided repudiation possible to Plato of the doctrine frequently ascribed to him by persons whose knowledge of his system is derived from a superficial reading of the *Republic*, that the world of knowledge and the world of perception are two different worlds, and not the same world more or less adequately apprehended. And it thus on the one hand serves to mark most emphatically the difference between the Platonic One and such a unity as was asserted in the physical sphere by

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the Eleatics and in the metaphysical by the Megarians, while on the other it answers by anticipation the statement of Apelt that Plato treats sensible appearance as mere *Nicht-Seyn*, and the theory of English believers in the "transcendence" of the Idea that sense-perception is the *merely* shifting and unstable. With regard to the "transcendent" Ideas of Megarianism one might say that the whole of hypotheses 1 and 2 are no more than the elaboration in detail of the contrast which Plato draws more briefly and more rhetorically in the *Sophistes* between a reality that stands "moveless and mindless" like an "holy image" and a reality which is fraught with "motion and soul and life." (*Soph.* 249 A.)

We might now, it would seem, bring our argument to a close. In principle the task of Parmenides has been accomplished. It has been shown, that on that theory of the nature of the world's unity which resulted logically from the position of the youthful Socrates, all assertion and all denial about reality are alike impossible, while on a rival theory both are intelligible. It would therefore be natural to conclude that the one theory had successfully established itself as against the other, and with this result the dialogue might have come to an end. In the *Parmenides* however as in the *Republic* Plato is not satisfied with the mere direct establishment of his thesis. It must be further confirmed by corroborative evidence and the production of negative instances. Thus we have still to consider in detail what will be the bearing of the two rival doctrines on the position of *τὰ ἄλλα*—the world of change and multiplicity—(Hypotheses 3–5) and what will follow from their denial (Hyp. 6–9).

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IV.—THE PLACE OF THE CONCEPT IN LOGICAL DOCTRINE.

By J. H. Muirhead.

There is nothing in which recent logical treatises contrast more strikingly with the older text books than the complete subordination of the concept to the judgment and the almost total disappearance of the discussions that used to find a place under the head of the doctrine of the term. This change is the logical outcome of the attempt to assign an independent place to the concept as an element in judgment. As against the old view that thought begins with concepts and proceeds to judgment and reasoning, the criticism on which the change rests is unanswerable. We may, however, admit this without admitting that the last word has been said on the relation of judgment to concept. It is possible that though the ground on which the older logicians rested their claims for the prior and independent treatment of the concept is untenable, and though there is much that is preposterous in the way in which they developed the doctrine of the term, their order of treatment was yet the result of a true instinct as to the ultimate nature of the movement we call thought and knowledge. This paper offers a few considerations in support of this suggestion. Its conclusions could only be justified by the success which might attend the attempt to carry them out in complete system of logic. Short of this, its length will, I hope, admit of a clear statement of the view in question and a few suggestions as to the change it would involve in the current treatment of logical doctrine.

I.

To clear the ground I shall begin by recalling the present state of the controversy. The criticism of the traditional view may be said to have been successful all along the line. According to this view concepts are formed from groups of particulars by the

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processes of abstraction and generalisation. Common elements are abstracted and constituted by their union into a general notion which is thenceforth taken as representative of the group as a whole and as predicable of any individual within it. Out of a combination of such concepts we have judgments; out of a combination of judgments, reasoning. Logic, therefore, is not only within its rights in treating the concept as a substantive element in thought; it is bound to treat at length of the various kinds of concept that might be united in a judgment at the risk of leaving the form and content of the judgment itself unexplained.

Of course it is easy to see that this will not do. Before we can "abstract" an element from any individual thing, we must already have *judged* the thing to possess it. And going a step further back, and considering what is meant by the "group" of things from which the concept is said to be abstracted, we see that it could only have been formed by looking at the individuals from some point of view, or as possessing some attribute, and that to group things in this sense is to make a judgment about them.

For the older logic with its neat system of discussion, beginning with the term, going on to the proposition, and ending with the syllogism, this attack on the independence of the concept was, of course, perplexing. Two courses seemed open to logicians who while conscious of the difficulty still desired to retain the old order: either (1) to accept this criticism as theoretically conclusive, but to treat it as practically irrelevant to the order and mode of discussion, or (2) to attempt to combat it on the ground of theory.

1. In a passage[1] which is interesting as showing more insight into the nature of the thought-process than his school is usually credited with, Thomson states the arguments that might be brought against the attempt to assign logical priority to the doctrine of the concept. "Why," he asks, "do we reason? To find whether some judgment which has suggested itself to our minds be true or not. Why do we seek to make this judgment? To add something to the clearness of the notion that is its subject. Copernicus reasoned to prove the globe revolved round the sun, and he established this judgment that when men thought of 'the globe' in future they might know it as the 'revolving globe.' All the reasonings in Aristotle's *Ethics* are to give a more adequate notion of happiness, of Plato's *Republic* to improve our notion of justice, of Bacon's *Organon* to afford a more accurate conception of method." After

[1] *Laws of Thought*, § 41.

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these admissions one might have expected him to go a step further and agree with modern logicians that if the matter stands on this footing, and concepts are founded on judgments instead of judgments on concepts, the function of logic must begin and end with the analysis of judgment, and that to repeat or forecast this analysis under the head of the concept would be superfluous[1]. This, however, would have involved a revolution in the whole treatment of logical doctrine for which the formal logicians of the time were not prepared, and Thomson falls back without more ado on the old order. It is artificial he admits, but in beginning with the concept, logic begins with the simplest element of reasoning, and is thus easier to follow.

In reply to this mode of meeting the theoretic difficulty, it is sufficient to point out that it is an odd way to achieve simplicity by trying to explain the nature of contrariety in the contrary and contradiction in the contradictory term, without any reference to the corresponding judgments in which alone they can appear. What again is to be said of a method of exposition which treats of division before the disjunctive, definition before the reciprocal judgment, and the whole elaborate scheme of the predicables and the predicaments before it has explained what predication itself implies?

2. The second way of meeting the above criticism was to enquire whether the theoretic argument in favour of the priority of the judgment to the concept was really unanswerable. This is the investigation with which Lotze opens his *Logic*. Lotze begins by admitting that ideas in their developed and accurately defined forms imply the previous activity of judgment:—"In order to frame complex and manifold concepts, and more especially in order to fix the limits within which it is worth while and justifiable to treat them as wholes and distinguish them from others, a great deal of preparatory intellectual work is necessary[2]." This, he says, is the truth contained in the proposal to reverse the usual order of treatment. But this proposal overlooks an important consideration. In order that this preparatory work may be possible, "it must have been preceded by the conformation of simpler concepts out of which its own subsidiary judgments are framed." How are we to conceive of this preliminary process? It is not we have seen judgment, but neither is it simple impression. A judgment is a construction. To make it we must have the materials ready to hand. On the other hand, it is not any

[1] See Bosanquet's *Logic*, vol. i. p. 39.
[2] *Logic*, i. 1, § 8.

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materials that will do. It is easy to make a heap out of nothing but round stones, if it be indifferent how they lie; but if a structure of regular shape is to be built the stones must be already so formed that their surfaces will fit firmly together. This process of shaping impressions into ideas he defines as conception. It consists (1) in the "objectification" of our impressions. We must conceive of the beginnings of knowledge as of something we undergo. But this is only a moment in the process. We go on to separate the sensitive act from the sensible matter to which it refers. The matter or content is stamped with objectivity as a something which has its being and meaning in itself, and which continues to be what it is and to mean what it means, whether we are conscious of it or not. But this is not all. If it were, the interjection would represent the process of conception equally with the substantive or the adjective. Hence (2), in objectifying, we must be conceived of as giving a definite form to the reality as either subject, attribute, or action. A concept is not merely of reality, it is of reality in a particular form, and the form which it takes must be regarded by logic, at any rate, as given.

A philosopher is known by his metaphors, and anyone who has been taught to regard logic as the "Morphology of Knowledge," will have a shrewd suspicion of a theory which proposes to throw light on the relation between concept and judgment, by appealing to the analogy of bricks and mortar. What is the activity by which Lotze conceives of the mind as giving a definite form to reality, as either subject, attribute, or action, if it does not involve, in however rudimentary a form, processes of comparison and distinction? Or again, what is meant by objectivation if it does not mean the qualification of an objective world by an idea? And what are all these implied processes but rudimentary judgments? They may not be judgments in which subject, predicate, and copula are clearly traceable, but neither are judgments of the form "there never was a sea serpent," and it is one thing to say that judgment has a beginning in a germ cell in which subject and predicate are as yet undifferentiated; it is another to maintain that this beginning consists of a small store of ready-made concepts, from which the mind selects the material of its subsequent constructions. The whole matter lies in a nutshell. What is it that differentiates a concept from the mere image or impression? There is no doubt about this. Lotze has done more than any other logician in making it clear. It is the objective reference we call its meaning. The image is a mere floating content, the concept is an adjective or proprium of reality. But the characteristic which marks it out as a concept destroys

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its claim to rank as an independent element of thought. For this reference by the mind of an idea to reality, or, if we prefer it, this appropriation by reality of a floating content is in the last resort what we mean by judgment.

The conclusion is inevitable. If we approach the question, as the older logicians did, from the side of terms and propositions, and inquire what is the relation of the concept as an explicit element of judgment to judgment itself, the only possible conclusion is that it represents "a habit of judging with reference to a certain identity[1]." When I say, "What a lot of buttercups," I mean by buttercups a system of judgments which I am ready to make in reference to a particular object, judgments which I am prepared to make because I have already made them. If it be said this system can at any rate be isolated from the judgment, and is actually so isolated in the ordinary course of human thought, this, again, is pure delusion, arising from the fact that by aid of the term we can isolate an idea from its context and place it by itself as in the case of the name of a street or a heading in an index. In all such cases the term stands for an element either in a categorical sentence: "This is Oxford Street," or in one of as yet undetermined modality: "Oxford Street!" Well, what about it?

All this is unanswerable, but it does not exhaust the subject, and there is a question which the above criticism leaves untouched. Granted that the first movement of thought is judgment, from what does it move? What moves in it? The older view is quite untenable; but it had this merit, that it recognised judgment as a point of transition. Judgment it held starts from a datum or data in the concept, and moves forward to a result in a new concept. Logicians have recently been so occupied in demonstrating the crudity of the account which it gave of the terms between which the movement takes place that they have tended to overlook the truth of the intuition on which that doctrine is founded. They have rightly perceived that even the most elementary movements of thought imply *acceptance*. Just as the psychologist insists upon belief as a primitive element in our conscious states, so the logician maintains that our mental attitude toward reality must be regarded from the outset as categorical. But to say this is only to clear the way for the question whether, just as the object of belief must be regarded as logically prior to the belief itself, so prior to any "attitude" there is that to which the attitude is adopted. The contention of this paper is that

[1] Bosanquet, *loc. cit.* p. 41.

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besides this categorical element which I admit is present in all experience, there is also another which may be called an *interrogative* and which represents in us the consciousness of an as yet indeterminate totality within which the judgment is made.

II.

Let me try to make this clear. Modern psychologists are generally agreed as against atomistic writers on the one hand and at least one interpretation of Kant on the other that consciousness begins, not in a disconnected manifold, but in an "undifferentiated Continuum." The evolution of mind is conceived of accordingly as a process similar to that which takes place in any other organism inasmuch as it exhibits the two-fold movement of differentiation and integration. How are we to interpret this starting point and this movement from the side of Knowledge, and of Logic, the science of the origin and growth of Knowledge? The "movement," we may say, offers no difficulty. For Logic this movement is the activity of judgment with its two-fold function of analysis and synthesis. But what of the starting-point? As judgment is a process of differentiation we must conceive of this process as taking place on a background of implicit unity. Before we can have thought in the concrete sense of the union of predicates, we must undoubtedly have explicit difference. This is the important truth which the criticism I have retailed has succeeded in bringing to light. But before there is difference or because there is difference there must be unity as the background or starting-point of judgment. To deny this and to seek for the starting-point in judgment itself, is like identifying an organism with the process by which its parts become differentiated instead of with the living embryo. It is true that this unanalysed unity is something less than concrete thought, inasmuch as its differences as well as its unity have not yet been made explicit. Yet just as the embryo while undoubtedly less than what it is on the point of developing into, yet in a sense is more in containing the promise of yet further changes, so this first implicit unity is more than the movements of concrete thought, in that it already contains implicitly all that it is the aim of these movements to make explicit and intelligible[1].

Here then is our result so far. It is a mistake to look for a *prius* of judgment in the explicit elements distinguishable

[1] For hints upon this way of stating the case I am indebted to an unpublished paper by Professor J. S. Mackenzie.

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within it. But this cannot mean that judgments hang in a vacuum or are begotten by spontaneous generation out of nothing. Granted a judgment is a movement of analysis and synthesis, there must be something which is analysed and which reappears in the result in a new and, let us say, more determinate form. The question is: How are we to conceive of this something? From the side of Metaphysics this is easily enough answered. Mr Bradley would say that it is Reality. Reality, he says, is the subject of all judgment. I have no quarrel with this statement. I wish merely to consider what it implies for Logic. Reality cannot be (Mr Bradley cannot intend it to be) something other than a form of experience. All reality is experience. It is, however, an experience as yet undifferentiated in respect to the particular subject and predicate of the judgment which is on the point of being made. Relatively to that judgment it is a *prius*. It exists before and it survives the judgment. For judgment is in its nature finite. It is a definition of reality. Reality on the contrary is in its nature infinite. It refuses to be defined or contained in any predicate. We try to exhaust it by enclosing it in the predicate, or, if you please, in the subject and predicate. We hope we have succeeded. Judgment raises our hopes. It promises us success. It says A *is* B. But we know all the time that we have failed. In the very act of judging the reality has escaped us. We have done something. We have made part of it our own. But a part, by far the greater part, still wavers as a phantom before us.

This is recognised in the case of the reality which we are said to perceive. This we are told is concrete while our thoughts about it are abstract. It is somehow given as a whole. Our judgments on the other hand are partial. They are about it and about.

> "Thought may take perception's place
> But hardly coexists in any case
> Being its mere presentiment—of the whole
> By parts the simultaneous and the sole
> By the successive and the many."

But the same is true of realities we cannot properly be said to perceive: the hyperbola, the Reformation, the human mind. Here, too, there is always a beyond which we have failed to grasp and which tempts us to try again.

> "Man knows partly and conceives besides
> Creeps ever on from fancies to the fact
> And in this striving this converting air
> Into a solid he may grasp and use
> Finds progress."

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What are we to call this element in our experience? Psychology does not give us much aid here. It is concerned with the origin and growth of our subjective states and considers its work to be done when it refers us to an "undifferentiated continuum" as their common matrix. But in logic we have nothing to do with the origin and growth of psychical states. We have to do with the mind's content in its objective nature as our "world"; and the question I have suggested is how are we to name that world at the stage at which it has not yet appeared as definitely determined by the contents of the judgment.

If we turn for an answer to the usages of popular language, they leave us in no doubt. We say we have a "notion" of a thing though we cannot describe it, that it is indescribable or (after we have heard it described) that we have a better notion of it than before. Again we say of scientific or other eccentric persons that they have "notions" of their own which we conceive of as obscure movements of their minds which they have not imparted to any one and have not even made clear to themselves. What popular language calls notion, I should propose, following Hegel, to call "concept." I am prepared of course to admit that this usage seems at first sight to differ from that with which English logicians have made us familiar. In a sense it seems even to contrast with it. According to the traditional use the concept is the group of predicates by which we have defined a thing. The concept of gold is hard, yellow, bright, untarnishable metal. According to the use here suggested, it is just the opposite: it is that element in our consciousness of the thing which is not yet defined by any predicates but remains over after we have done our best, as an unmanageable surd. The contrast may be made even more striking by a reference to the traditional doctrine of the proposition. Traditional logic analyses the proposition into subject, predicate and copula. It looks for the concept in the two former elements and passes over the copula as a mere connecting link between them. According to the above view it is required of the new logic that it shall reverse this treatment and look for the concept no longer in the determinate elements which the judgment exhibits but in the indeterminate "is" which it has sometimes[1] been paradoxically maintained constitutes the true subject or starting point of the judgment. Yet, in spite of this apparent contrast, there are advantages in the proposed terminology which will presently appear. Meantime two questions remain: Does the concept in the sense just defined

[1] Cp. Professor Jones's *Philosophy of Lotze*, p. 359.

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really enter into logical doctrine at all? Granting that it does is there anything to be said about it that would not be better said under the heads of judgment and inference.

III.

1. The former of these questions must be answered by asking another: How are we to conceive of Logic? Is it the account of the mode in which true judgments are formed about a reality which is given independently of them? *Or* is it the account of the steps by which reality itself develops in the individual mind?

The first of these views is that which was made current by the material logicians of the last generation. It assumes that we have reality on the one side as something given us independently of our judgments about it and judgment and inference, as merely ways of arranging our ideas *about* it, on the other. According to this view the science of true judgments and the science of reality about which the judgments are made fall apart—the one is called logic the other metaphysics. The latter is that which has to do with the concept in the sense above described while logic is only concerned with the traditional concepts and with judgments and inferences which are formed out of them or again which go to form them. With this view we are not here concerned. Those who still hold it are not likely to admit that there is any suitability in describing the reality about which we form concepts as itself a concept.

But it is different with the present generation of English logicians. They no longer start with a separation between knowledge and reality. Reality is already present in the earliest form of experience. "Reality" says Mr Bosanquet[1] "is given for me *in* present sensuous perception and *in* the immediate feeling of my own sentient existence that goes with it." This cannot be too strongly emphasized. Reality is given from the first or not given at all. Your America is here or nowhere. The kingdom of truth like the kingdom of heaven is within you. Plato said its development was a process of remembering of what we knew before. This is a myth, but it has a meaning and its meaning is that knowledge is the progressive unfolding of an objective world which is already present in idea. How are we to conceive of this idea? It is here that I wish the new school of logicians to be more explicit. Mr

[1] *Logic*, vol. i. p. 77.

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Bosanquet wishes us to conceive of it as judgment. Reality he says with Hegel is a judgment. But Hegel is also identified with the doctrine of the notion, and I have been trying to show that there is no gain but a loss to logic in dispensing with it. To do so leaves the judgment as a piece of lifeless mechanism on our hands. The judgment is a movement, but what moves in it? The mind certainly moves, but only *with* it. What moves in it is reality itself.

But if this be so, why, it may be asked, not say so? Why introduce confusion by baptising this reality as concept? For several reasons. First, because reality is experience, and by calling it concept we secure that truth in the rear. Secondly, the new usage is not so far removed from the old as might appear. The concept is reality regarded as the principle of movement and progress in the mind's experience. But reality is never present as a whole. It is always at some particular point that reality makes itself felt. Knowledge never grows as a whole. It grows at some particular point. This point is what we call the subject of thought—the topic of conversation, exposition, or what not. And this in turn is never present in its totality, but is developed in successive steps corresponding to separate heads and ultimately to the subjects of separate sentences. These, if we like to say so, "symbolise" the topic or area of reality with which we are dealing, and this, again, symbolises reality as a whole, but they do so, not as something different from it, but as the determinate forms it assumes in virtue of the constitution of the human mind as a finite organism.

Mr Stout has done good service in illustrating the relation between subject and predicate, as ordinarily understood, from the relation between the "subject" of conversation and the series of judgments through which it is advanced. The grammatical subject he conceives of as the rest of the foot on the ground in walking, the act of judgment as the forward movement executed from it. His whole account, as well as the doctrine of apperception with which it is connected, may be taken as giving us the psychology of this process. But while psychology is concerned with the fact and the way it comes about, it has nothing to do with the reason of it. It leaves this to logic, and it seems surprising that the logic of apperception is still to seek. The doctrine of the concept would fill this gap. In such a doctrine the dominant apperceptive group would appear, not merely as a *natura naturata* with an origin in time and again operative in directing the succession of mental states, but as a *natura naturans*—the point at which reality as an objective

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system is operative in the individual mind. All that modern psychology has to say about the way in which these groups act in appropriating new material from the data of sense is of course welcome to the logician, but it leaves the question of what it is that makes the appropriation, and why it makes it, unanswered. This it would be the aim of the logician in the doctrine of the concept to set forth. He would show (to return to Mr Stout's metaphor) that what moves in the judgment is the subject itself. The argument we say "advances," the subject "moves on," and as it moves it "develops." Reality becomes richer and more coherent at the point indicated by the subject. If it be said that this is a strained and exaggerated account of what takes place in ordinary thinking—such movement being the exception and not the rule, since most people's notions are stereotyped—this is to forget that wherever there is mind at all there are interests, and that these interests represent the points at which reality is on the growing hand. Where, on the contrary, there are no interests the mind's world is on the wane, reality is on the point of deserting it, and leaving it to imbecility or death.

2. The second of the above questions has already been answered by implication in what has just been said. If the aim of logic be to give an account of the development of reality in the individual mind it is surely a fundamental part of it to give some account of the points from which it may start. This would not, of course, mean that we are to begin as the traditional logic exhorts us to do, with an enumeration of the different kinds of concepts on which popular language has accidentally stumbled. We have already seen how such an enumeration of the "elements of judgment" is an anachronism. It would mean that after making clear that what we intend by the "concept" is the form which reality as an intellectual possession assumes in the individual mind and thus distinguishing it from the ideal of goodness on the one hand, and beauty on the other (the subject-matter of ethics and æsthetics), we should go on to attempt to delineate the stages through which it passes in its progress towards complete transparency and coherence.

If the reader desires an illustration of what is meant by such a delineation he will find one in Sigwart's account of the different meanings that may be assigned to the term concept. In a passage towards the beginning of the *Logic* (Eng. Tr. Vol. I. p. 245) Sigwart distinguishes, (1) the psychological concept—the first rude image of reality at the stage at which by acquiring generality it has become qualified to take its place as an element of judgment, (2) the logical concept—the idea

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with its meaning fixed and clearly determined, (3) the metaphysical concept the adequate copy of the essence of things. In the last sense we speak of the concept of life which would be the keystone of physiology, the concept of matter which would do the same for chemistry and physics, of mind for psychology, and, as Hegel would remind us, of freedom for history and ethics. After making these distinctions, Sigwart dismisses the concept in the first and the third sense from logic, and proposes to confine himself to the second. But this is a quite arbitrary concession to the older logic. The best that can be said for Sigwart is that in the sequel he does not confine himself with any strictness to the limits he here lays down. On the above interpretation of the meaning of the concept these three are not different senses in which concept may be taken, but show themselves at once as only different stages in the development of the concept in the individual mind. First it appears with all the irrelevancies of our particular experience. The universal is concealed by the particularity of the form under which it appears. Next we have the working definitions of science. The concept has been sufficiently purified of irrelevancies to serve for purposes of accurate thought, and as a starting point for scientific treatment. Lastly, it is passed through the retort of observation and analysis and developed into that completely coherent and transparent system which we call the scientific notion of the thing[1].

All this, however, would be matter of detail into which I am not here called upon to go. The object of this paper will have been sufficiently served if it has suggested as the finishing touch required by the splendid work of reconstruction on which English logicians have recently been engaged the explicit recognition: I. That logic rightly understood is the science of the forms which reality as an intellectual possession assumes as it develops in the individual mind. II. That this "reality as an intellectual possession" is what ordinary people understand by notion and, however we, as logicians, choose to denominate it, must be regarded as prior to judgment not as bricks and mortar are prior to the house, nor even as the seed is prior to the plant, but as the soul is prior to the body, or as the consciousness of will and personality are prior to the actions by which we try to express them.

[1] These three stages correspond on the whole to Hegel's abstract particular, abstract universal, and individual which again are roughly the singular, the general or abstract and the universal of modern logic.

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IV.

Since writing the above I have read Mr L. T. Hobhouse's interesting chapter on "Simple Apprehension" at the beginning of his recently published work on the *Theory of Knowledge*. With Mr Hobhouse's conclusions I find myself in general in hearty sympathy and already owe so much to his book that I am loath to quarrel with any part of it. But it may serve to bring into prominence the point I have striven to make if I compare it with the view for which Mr Hobhouse there contends.

Against Green's view that the apprehended content is constituted by the synthetic activity of thought and that all knowledge is of relations Mr Hobhouse holds with James that before we can relate there must be something which can be related, that "judgments themselves would have no meaning if they did not refer to the data as apprehended," and accordingly that the primary act of knowledge is not a judgment but a simple apprehension.

The view here stated seems at first sight to bear a close resemblance to that for which I have contended—the only difference being that where I speak of "concept" Mr Hobhouse prefers to speak of "content of apprehension." In reality it differs from it in two important respects:—

1. Mr Hobhouse adopting the phraseology to which Mr Bradley has given some countenance speaks of the sensation or content of apprehension as the point at which we are "in closest contact with reality." The immediate effect of this is to force him to conceive with Mr Bradley of the act of apprehension as a reference of content to reality. But this is to expose himself at once to the argument which recent logic has directed against Lotze's attempt to distinguish judgment from concept. Mr Hobhouse seems quite conscious of the difficulty and proposes to meet it by calling apprehension an "assertion" (p. 19) and its content "fact." But this only throws us a step further back. What is an assertion wherein nothing is asserted? And if something is asserted wherein does an assertion differ from a judgment? And again what is fact if it is not the content of a judgment?

To incriminate Mr Hobhouse is not however to exculpate myself, and it still remains to show that this difficulty does not attach to the view that has been taken above of the logical prius of judgment. This we have seen is idea and it is also reality. But how it may be asked can it be idea unless it has identity and how can it have identity without having difference?

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and these imply judgment. Again how can it have reality unless it be taken for it or referred to it? and so to take it or refer it is again judgment.

To the first point I reply that the concept for which I contend is a region of experience into which identity and difference (and therefore judgment) have not yet penetrated, and to the second that it is just this "reference of the idea" as a subjective content to reality as objective that I find so incomprehensible. The terms in which the doctrine is stated seem to me to be derived from the older view of the nature of judgment as predicating one concept of another. It suggests that we have first an idea as a species of unsigned cheque and that we then proceed to attach the signature of reality as of another and different kind of idea to it. This of course is mythology[1]. It is better frankly to regard the concept as that which develops in the judgment, as the unity of the content and reality—a unity which, as we have already seen, is symbolized in the ordinary analysis of the proposition not by the subject nor even by the subject + the predicate but by the copula.

2. The second point of distinction may be stated in a word. The datum or starting point on Mr Hobhouse's view is the content which is attended to. He admits of course that there is a margin as well as a focus of attention. But this margin he treats, with the psychologist, as something *beside* the content and irrelevant to it. The point which is important for logic, conceived of as the science of the steps by which reality develops in the individual mind (and this, as I understand him, is the way in which Mr Hobhouse conceives of it) is thus obscured. Reality is thus after all conceived of as beginning for us in that most attenuated and impotent of all its forms—the mere isolated sensation, and we are left to look for the principle of the whole movement which Mr Hobhouse is about to describe among the abstractions of psychology—for the living among the dead. The view above taken insists on the contrary that the starting point for logic is not the mere sensation but the sensation upon the background of the concept of which it represents only the first stirrings in the individual mind.

[1] It is curious that Professor James should be one of the most ardent opponents of this view and yet should fail to see that in rejecting it he implicitly admits at least one part of the "intellectualist" contention that our primitive experiences are already "thoughts." Mr Hobhouse's polemic against Green possesses this great merit as compared with Professor James's that in naming the *terminus a quo* of thought "assertion" instead of "sensation" he acknowledges this truth.

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I shall bring these differences to a point. Mr Hobhouse says "we maintain that apprehension is a distinct factor postulated as a condition by judgments of perception and that its content is a distinct part within the more complex whole which judgment asserts" (p. 28). I have replied first that this merely reopens a controversy which ought by this time to be taken as closed[1]; and secondly that it gives no logical rationale of the movement we call thought. I should therefore propose to amend the above statement by maintaining that the starting point is not "a distinct part within the more complex whole which the judgment asserts" but an indeterminate complex within which judgment moves as the process whereby its contents are first resolved into relative simplicity and then reassimilated as parts or elements of a determinate whole.

[1] Mr Hobhouse himself in his chapters on *Ideas* (cc. vi. and vii.) seems so to take it.

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V.—CONSCIOUSNESS AND BIOLOGICAL EVOLUTION. (II.)

By Henry Rutgers Marshall.

Sec. 1. In the article which has preceded this I spoke briefly of the two fundamental influences which we discover in all of organized life; of the influence which tends to restrict variation within certain typical lines, and of the influence which would lead the organism to break free from the restrictions thus presented.

I there spoke of the very beginnings of the appearance of these two influences in hypothetical simple aggregates: but the same two influences can be traced through the rising grades of life even until we reach the *quasi* organic social aggregates: for it is true as Prof. Knight has lately said[1] that "there is no doubt that the two factors in the historic evolution of the human race have been the power of the individual in leading the masses, and the power of the masses in controlling the individual."

The reader will of course realize that these influences which appear so diverse, as we view complex organisms objectively, are in fact both but aspects of the basic tendency to the persistence of life: they appear in opposition, because of the fact, which will become more clear in the sequel, that the tendency to strive for persistence of life is fundamentally *elemental*, and only secondarily relates to more or less integrated aggregates of elements.

But it is with these aggregates of more or less complex organic form that biology has to deal, and I believe that I shall not be misunderstood if for the sake of brevity I often refer to these divergent tendencies as we actually note them, without reiterated reference to their basic unity.

I shall not attempt here to trace the two influences through different forms, but shall discuss certain questions relating to the grand divisions of human capacity which these influences are efficient to produce.

[1] *Mind*, N.S. Jan. 1896.

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I.

Sec. 2. Let us study first the influence which is restrictive of variation. The reader will at once recall that I would identify the effects of this influence in its broadest lines with instinct: for what I call instincts are those organized trains of activities which are determined to the attainment of biological ends. These two qualities, organization and movement towards some biological end, determine the actions of the individual in certain typical lines; and this is true whether the actions involved are fixed, as in reflex actions; or are more or less varied; or even if they are recognizable only by a general trend through an inextricable maze of utterly unpredictable reactions.

The point that I wish to emphasize in the first place is this, that the great mass of the instincts with which we are familiar may be broadly divided into three great classes, determined by three diverse types of biological ends. We have

1. The instincts which tend to render persistent the life of the individual.

2. The instincts which tend to render persistent the species to which the individual belongs.

3. The instincts which tend to render persistent the social aggregates formed by individuals in the higher processes of development.

1. Sec. 3. In those simplest of living masses which we may suppose to grow, and to multiply by fission, we must assume the existence of certain co-ordinated actions which relate to the absorption of nutriment. As simple organisms arise these co-ordinated actions must be continually existent, and as organisms become more and more complex, these co-ordinated activities although becoming correspondingly complex, must still retain their distinctive character.

As organisms develop we find another group of co-ordinated instinct actions leading to general expansive activities occurring upon the approach of what is usually advantageous to the organism; and still another group leading to a general shrinking, a hypernormal quiescence, occurring upon the approach of what is usually disadvantageous to the organism. A little later as organisms become active in their environment, we find co-ordinated instinct actions leading the organism to flee from the disadvantageous, to approach the advantageous, or to attack the disadvantageous: we also find developed many complex self protective reactions.

All of these types of instinct action of ancient lineage I have

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attempted to show elsewhere[1] are discoverable in the higher animals, and in ourselves the highest type of living beings.

If the hypothesis of parallelism, as I hold it, be true, then all these instinct actions, involving pulses of neural activity in us, must involve pulses of psychic activity also: in other words they must be accompanied by what I have called "instinct-feelings." But most of these "instinct feelings" will not appear in consciousness, either because the neural systems which are coincidently called into action are to a great extent disconnected from the brain system, or because the activities involved are so nearly fixed and definite that the psychic effects coincident with them will be unemphatic and will sink into that unanalysable complex which we call our empirical Ego.

But that these "instinct-feelings" do exist becomes clear when we consider that under certain conditions where we should expect them to appear in consciousness, they do so appear viz.: under conditions in which the whole organism is involved, or else under conditions in which the instinct actions although relatively fixed are called out only occasionally, and when called out must be emphatic if they are to be effective.

I have attempted to show elsewhere[2] that in such cases the "instinct feelings" gain a name and are called emotions: and that Joy, Sorrow, Dread, Relief are emotions of the type determined by the fact that the whole organism is involved; while Fear, Love, and Anger are emotions of the type determined by occasional and emphatic occurrence of the biologically valuable instinct actions.

But the special point that I wish to make clear here is that these instincts have individualistic import only, although of course they would never have been developed to the point reached in us had not the efficiency of the species become a part of nature's plan.

2. Sec. 4. Turning then to the instincts relating to the persistence of the species; it seems to me probable that they have been grafted upon these individualistic instincts, if we may so speak; and that the individualistic instincts have been specially developed in certain directions that happened to conduce to the persistence of the species.

It is true that rudimentary reproductive systems, and rudimentary sexual processes through which continuance of type is determined, are found very early in the development of animal life; still in these low organic types we note many

[1] See *Pain, Pleasure, and Aesthetics.*
[2] *Op. cit.*

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forms of reproduction without sexual differences or relations; and many which are independent of conjugation between different individuals, parthenogenesis, hermaphroditism, and the like: and in certain types where sexual reproduction is possible, and sometimes where it is usual, we find it often replaced rhythmically or irregularly by non-sexual reproduction: in all such cases the individual is clearly self-dependent in relation to the propagation of its kind.

All this makes it appear probable that individual organic life, with inherent power of reproducing its own kind, long persisted before the slight advantage gained by sexual differentiation began to make the existence of different individuals of importance, and dependence of one individual upon another necessary, if the type were to persist. And during this long period the animal must have been self-dependent individually; in it must have arisen the germs of many instincts which related only to its own individual persistence. This is made clear when we note certain of the lowest types of organisms that can be examined under the microscope, which habitually reproduce their kind without conjugation of any sort, but which show nevertheless many differentiations of individualistic instincts.

When then sexual reproduction became important, the instincts relating to sex must have been formed out of, or in relation with, complex individualistic instincts already existing.

So far has this process been carried indeed that it is somewhat difficult to separate some of the individualistic instincts still existing in us, from the instincts relating to persistence of species with which they have become bound up: a notable instance of this is seen in the case of love; we can only become convinced that love is in its origin of individualistic import, by noting that we are able to be excited to love by persons with whom sexual desire cannot possibly be connected (*e.g.*, brothers and aged parents) and by non living objects (*e.g.*, knowledge) which have come to be of advantage to us.

I cannot stop to speak of those many complex instincts that relate less to sensual actions than they do to the protection of the young, to permanent mating, to the formation of the rudiments of family life. All of these instincts are later in appearance than those which relate to conjugation but nevertheless deal with the persistence of the species to which the individual belongs.

There is one point that I would specially emphasize here, for reasons to appear later; it is this; that in order to account for the formation of the instincts which relate to the persistence of

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the species, we must assume that the instincts of purely individualistic import have become subordinated to these newly forming instincts of wider than individualistic significance: so that in the long run the individual would come to react under normal conditions to protect himself indeed as an individual, but only in such ways as would lead to the persistence of his species under these normal conditions.

The instinct feelings correspondent to the instinct actions spoken of in this section I shall not stop to treat further within the limits of this article.

3. Sec. 5. If we turn now to consider those instincts of a type which relate to the persistence of social groups I think we must grant also that these social instincts have been grafted upon the individualistic instincts, as thus subordinated to those which relate to the persistence of the species: in other words, we must agree that the individualistic instincts, as modified with relation to the persistence of species, have been specially developed in certain directions that happen to conduce to the persistence of social groups.

And here too the process has become so complex that it is difficult often to follow the threads used by Nature in the weaving. We recognize such instincts of social import however in the patriotic instincts, in the ethical instincts, in the benevolent instincts and in the art instincts, as I have elsewhere argued at some length in the work above referred to.

But here again the point that I would especially emphasize is this: that in order to account for the formation of the social instincts we must assume that the instincts of individualistic import, as subordinated to those instincts which relate to the persistence of species, must in their turn have become subordinated to the newly forming social instincts: subordinated so that in the long run the individual would, under normal conditions, come to react indeed to protect himself as an individual, in such ways as would also lead to the persistence of the species, but only in such manner as would lead to the stability of the social group to which he belongs.

Sec. 6. In what has preceded, I have studied instincts in three groups or classes; and the reader will agree with me, I think, that the instincts thus treated make up a very large proportion of those which we observe in our own lives and in the lives of animals.

But it would be incorrect to suggest that these great groups include all the instincts developed in the higher animals. The

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so called "imitation instinct" may be mentioned as an example of an instinct which is not thus classifiable.

Possibly this instinct may be found to be merely the marked and complex development of a very fundamental mental and neural tendency, as Prof. J. Mark Baldwin appears to suggest: but it seems to me that the complex imitative tendencies which we recognize in our lives are of complex instinctive type, and are emphasized by Nature because she is able to use them for purposes of biological experiment in her vast laboratories: they do not appear to me to be identical in their essence with that "circular process" which Prof. Baldwin would have us call "imitation," and which he has shown to be determined, to a great extent at least in its beginnings, by self imitation.

I am free to confess however that I fail to note any large number of important instincts which cannot be included in one of the three great groups we have studied. I do recognize nevertheless a fourth class of which however few examples are prominent. This fourth class is made up of instincts which deal with the regulation of relations which it is advantageous to foster between the instincts already discussed.

A clear example of this type of regulative instinct is found in the "play instinct." Plays are occasioned by the diversion into certain relatively definite channels of surplus, so called "spontaneous," energies, which have resulted from hyper-nutrition, but which have been given no opportunity to express themselves in action. Nature has formed within us tendencies to divert these energies into channels that give practice in directions in which skill is, or will presently be, of value to us. It is a common-place that the plays of children make them ready for activities of after life: the girls' plays with dolls tell of future maternal activities: the boys' plays correspondingly tell of the world's battles he is to wage, often indeed reflecting the actual physical contests in which he would take part were he not held back from barbarism by the civilization in which he lives. In like manner the plays of mature men and women lead them to practice in directions which are likely to be advantageous to them in every day life.

I mention this fourth class here particularly because, as the reader will discover later, I shall endeavour to show that Nature has built up in us a most noble instinct of powerful force which cannot properly be placed in any of the three classes above described, but which I shall endeavour to show functions solely for the regulation of those relations existing between the instincts of these three classes which it is of the greatest advantage to emphasize.

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Sec. 7. And now I wish to ask the reader to consider more in detail the matter of that subordination of one set of instincts to another set, of which I have above spoken. It is evidently important that this subordination of individualistic instincts to those relating to the persistence of the species, and of these two, in certain relations, to the social instincts:—it is important, I say, that this order of subordination should be conserved if the rise of social *quasi* organic aggregates is of biological importance. That this rise is of importance appears to be proven by the very existence of the social instincts: for it is exceedingly difficult to conceive how these instincts can have been formed, and once formed how they can have persisted, unless we suppose that the individual is indirectly better adapted to exist in his environment, and to perpetuate his kind, as a member of such a social group, than would have been the case had he not acted as a part of a social group by the subordination of his instincts in the order above described. The reader will find the point thus made to be of moment in the development of the argument in the next article of this series.

Of one more point I wish to remind the reader before turning from the study of the influences restrictive of organic variation. It must be apparent to him that the tendency to organic variation to be presently treated must on the whole be held in check, otherwise instincts could not be formed. In other words, the existence of instincts shows that typical actions have on the whole prevailed over variant actions in the development of the individuals of a race; that those individuals which subordinated their tendencies to vary, to those influences which led them to act in certain ways that have proved of value to their ancestors,—that those individuals have persisted and have left descendants who have proved able to hold their own in the contest for survival.

II.

Sec. 8. I shall now ask my reader to turn with me to consider the variant influence which we have noted to be as important in the evolution of organic life as the influence which tends to restrict variation.

In the first article of this series we considered certain questions of interest to both psychologists and biologists as they seemed to be more clearly defined in the light of the theory of neural and psychic parallelism.

In what follows I shall ask the reader to study with me, in relation to the same theory, a problem of especial interest to

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the biologist, in the solution of which we may hope that psychology will some day offer some effective aid. I refer to the problem of the origin of those variations of organic forms which surround us and of which I have spoken so often in what has preceded this.

Sec. 9. I think all biologists will agree that if we postulate the existence in the dim past, of uniform undifferentiated living masses, there is no difficulty in conceiving of the appearance in them of variations, provided only they be acted upon by divergent forces. There is no more reason to doubt that variations would thus occur than there is to question the fact that inorganic elements will vary in reaction under like conditions of varying stimulation.

But if we find no serious difficulty in comprehending the origin of simple variation, we do find it no simple matter to divine the modes of occurrence of this variation in complex, differentiated, and yet integrated organic matter.

Now if biological actions of a certain type are parallel with what we know in consciousness, if mental effects are co-ordinate with physical effects in neural fields; if moreover biological variation be going on in our lives to-day; then that neural variation which is all important in higher life should be evidenced by psychic variation, and the mode of this variation might not impossibly be found reflected in some mode recognizable in our conscious life. It would seem possible then that an examination of psychological data might throw some light upon the problem of the nature and origin of the variations that perplex us. At all events it seems to me to be quite worth while for the biologist to turn to psychology and to enquire whether our science may not have a word to say to him on this subject.

Sec. 10. Let us turn our attention then to consciousness as we experience it in its most highly developed form, and look for its relations to variation. As soon as we do so we are struck by the fact that our mental life naturally divides itself, as by an inherent cleavage, if we may use the term, into the coincidents of instinct and of reason: instinct determining the existence in consciousness of impulses of one form or another; reason determining, in large part at least, processes which appear to inhibit or guide these impulses.

We are then forcibly led to the thought that instinct, and the impulses which it determines, are related to demands which are bound up with our organic nature, which determine our type; while on the other hand reason, and ratiocinative pro-

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cesses, appear to be as distinctly related to real or attempted divergence from typical forms of action.

It seems to me that here we have a distinct leading, and that if the nature of reasoning process in relation to impulse be studied in connection with the biological problem which we are here considering, there is a large probability that some conclusions may be reached which will not be valueless to the student of living forms. And this is probably true whether the suggestions made in what is to follow have or have not any worth in this regard.

Now if we examine for a moment our mental experience in connection with those most complex impulses which we are accustomed to call the "higher" ones, viz. the ethical impulses, as these impulses are related to our reasoning, we are naturally led to recall in the first place the fact that these ethical impulses are dependent upon the existence of the organized social life in which we individual men and women are elements. Oppositions to murder, to theft, to adultery; impulses to benevolence and sympathetic aid; all alike would be functionless if each one of us existed in isolation from the social fabric.

In the second place it seems equally clear that at least a very large proportion of the actions which lead to the suppression of, or to divergence in, these impulsive demands of social import, have themselves relation only to ourselves as individuals; and that it would be impossible to hold for a moment that these actions inhibitive of the social instincts would be in like manner functionless if we happened to be leading a life uninfluenced by the existence of the social fabric. Murder, theft, adultery, hatred, envy and malice, all arise as individualistic tendencies, and foster individual efficiency.

We are then led to the position that in the *quasi* organic social life, variation from the typical forms which are represented by the ethical impulses is determined, to a great extent at least, by action on our part as though for the moment we were individuals without close bonds to this social life. We individuals who are elements in the social aggregate tend to vary from our social type when we act as individuals, as elements, without reference to the whole aggregate with which we find ourselves bound up.

This looks as though the action of an element of an aggregate, as an isolated entity, without reference to its position in the aggregate, might be of importance in the consideration of variation in general, and without further examination of the subject from the point of view just taken I shall ask the reader to turn with me to an objective consideration of the subject.

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Sec. 11. I wish now to indicate as briefly as may be the evidence that variation from typical forms in complex organic life is determined, to a great extent at least, by conditions which lead elementary parts to act for themselves and not in relation to the aggregates of which they are elements.

In the sixth section of the first article of this series we considered the probable effect upon a simple aggregate of simple living masses if one element in the aggregate were affected by a special stimulus from the environment; and we concluded that under such conditions the element affected would tend *primarily* to react upon the disturbing force as though it were an isolated element; and that *secondarily* only would this action be modified, or inhibited more or less fully, by the influence of the other elements of the aggregate.

Here then we have in this hypothetical simple aggregate under such conditions a mass of elements, a large part of which act in some definite manner, but one of which acts differently under a special stimulus; and if we happened to view the aggregation as a whole we should express this fact by saying that one part varied. And it is to be noted that this variation means simply the action of one element of the aggregate as though it were without connection with the other elements.

Sec. 12. If now we substitute the word cell for the word element, in the section that has preceded this, we have a description of action in the lowest forms of what we call organic life. If we agree that the connection between the cells of the aggregate has become intimate and the relations of the actions of these cells therefore important; then we see that each cell that is specially acted upon from its environment will tend *primarily* to react upon the disturbing force as though it were an elemental cell, and *secondarily* only as though it were part of the aggregate; and it follows that if the disturbance from the environment be forceful, then the action as an isolated element will become more emphatic than the action as a part of the aggregate; and furthermore that if we look at the organic aggregate as a whole then we should be led to say that this particular element had varied. It is further to be noted that this tendency to variation will be modified by, and will be determined in a secondary way by, the closeness of relation, the integration, between the cell parts.

Sec. 13. I think I may take it for granted that the reader will follow my thought if for the sake of brevity

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I make a great leap and take up now the consideration of the higher organic forms which are made up of parts which are themselves intimately integrated aggregates of cell life. Here I think we shall see that there is much evidence that variation from typical forms can be identified to a great extent with action of a special part as though it were an individual entity out of relation with the larger organic aggregate of parts of which it is in reality but one element.

In all the animals of higher grade we find specially differentiated organs, as we call them, which are employed in different functionings.

Now I wish to ask the attention of my reader especially to one point in reference to this differential functioning, which is of importance to our general argument. It seems clear that in an organism made up of differently functioning cells, or of differently functioning parts formed of aggregations of cells, the differentiated parts must have come to act, where the conditions are *normal*, in a manner which is best suited to their own perfect working; this normal action, however, at the same time being suited to the maintenance, under these normal conditions, of the life of the organism to which the differentiated parts belong. Let me explain this symbolically.

Let us suppose that in organism A formed of differentiated parts a, b, c, the normal functioning of a or of b or of c, to their own best advantage, does not produce results favouring the persistence of the whole organism A; but that on the other hand in organism B, formed of differentiated parts a^1, b^1, c^1, the normal functioning of a^1, b^1, and c^1, does produce results favouring the persistence of the whole organism B; then evidently organism A will be likely to be destroyed, while organism B will be likely to persist, and we shall have its differentiated parts a^1, b^1, c^1, functioning normally as they would to their own best advantage as though the organism did not exist, and yet at the same time by this very functioning bringing about certain actions in the organism as a whole, which actions will, under normal conditions, tend also to result in the persistence of this organism.

The main point that I would ask the reader to note here is this, that each differentiated part of an organism under *normal* conditions acts, as it were, to its own elemental advantage. And although evidently the parts have been so modified that the action they would properly make for their own individual advantage as parts, will be best adapted to arouse such activities of the organism as a whole as will lead to the advantage of the organism rather than the parts;

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still it is clear that this action in reference to the whole organism is of a secondary nature, if we may so speak.

But now I would ask my reader to consider what will happen if the stimuli reaching these differentiated parts should happen to be *abnormal*. Under such circumstances these parts, knowing (if I may be allowed so to speak) only of their own functioning, only of the demands upon them to react to these unusual stimuli, will tend first to act as though they had no relation to the whole organism; and only secondarily will their action be modified by the influence of the other parts of the organism which are drawn into unusual functioning as the result of the abnormal action of the part first affected.

Under conditions of morbid stimulation the heart will often undertake extraordinary work: this action may be modified by the influences from the rest of the organism sufficiently to prevent disaster to the organism itself; but on the other hand the excessive activity may, and not infrequently does, result destructively to the system as a whole, before this modification through systemic influences can take place.

The intestines in like manner will function with excessive vigour to throw off colonies of poisonous microbes; and, if the restraining influences from the organism are not effective, their action may bring death to the whole organism through the general exhaustion caused by their efforts to function for the advantage of their own special part.

Of course with the increase in integration, in interdependence of the parts, the tendencies to act as parts without relation to the rest of the organism becomes less marked and the influences from the organism become more quickly effective; but nevertheless it seems clear that the influence from the organism must always be secondary, and if the stimulus to the special part be sufficiently forceful there will always be danger that the influences from the organism will not be able to hold the elemental action in check.

The actions which I have above illustrated are accommodative actions, and the capacity to make such accommodations to abnormal conditions as those described must result in variations from the normal type. And the reader will note that if I am correct these variations from type are also explicable as due to action of elemental parts of a complex organic aggregate as though they were independent of the organism, and without relation to the part they normally play in the functioning of the organism as a whole.

Sec. 14. And now again I shall ask the reader to make with me a great leap; to consider those actions which imply

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variation of individuals from the forms of action which are typical in our social life.

The reader will now recall the study we made in the first article of this series in reference to the conception of a social organism and he will remember that I there laid especial stress upon the limitations of this conception. I argued that although we are compelled to acknowledge that social life may be found to be organic in its nature, still it is very clear that if this *quasi* organic social life exist it must be of a type corresponding in integration to very low forms of individual organisms. And surely this lack in the social organism of that close integration between the individual elements that is so distinctly marked between the elemental parts of the higher animals, and which tends to limit or prevent variation in them, should lead us to expect to find in the social organism a very distinct tendency to variation from typical action in the lives of ourselves, who though individuals are elements of this hypothetical wider organic whole.

Now it is clear as we have already seen that in the evolution of normal individual life, the primary action in response to stimuli from without upon the cells, must have been subordinated to secondary actions tending to produce effectiveness of the individual, in case the two were not thoroughly adjusted to the same end. In like manner in the evolution of normal social life the response to the complex stimuli from without must be subordinated to secondary actions tending to produce effectiveness of the social complex, where the two sets of actions are not thoroughly adjusted to the same end. But it is also clear that where conditions are not perfectly normal in our social environment then, if our suppositions be correct, we should expect to find forceful stimuli tending to produce action in individuals as though they were disconnected altogether from the social aggregate, and this tendency to variance from the normal life of the social type should be expected to be the greater because of the slightly integrated form of this social organism of which we individuals are the elements.

I think it will be apparent to the reader without argument that we do show this tendency to variance from the social type marked out by our ethical instincts, and this variation will be found in great measure I think to be identical with our action as individuals, as it would be if we were totally isolated and not affected by social demands. Under the sudden and overwhelming appearance of extreme danger, as in the case of earthquake, the man will cower or flee, in answer to his individualistic self-preservative instincts, who would be not at

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all slow under ordinary circumstances to act in answer to his social instincts for the protection of his tribe. A man if placed at bay may kill his comrade in self-preservation although ordinarily he would avoid such an act by means of restraints all of which have social import.

In other words, here again we find that variation from typical forms is determined by action of the elements (ourselves in this case) of an organic aggregate (the social body) as though they were isolated and had little or no dependence upon or relation to the aggregate as a whole.

It would be impossible within the limits of an article like this to stop to explain complex cases of reasoned variation which may not seem at first glance to fall within the general formula here suggested. I believe however that it will appear clear upon consideration that the ends which reason bids us keep in view in our variation in this regard are ends which would separate us from the order of that social life which in the past ages has been instrumental in the building up of the social, the ethical, instincts; and that our variant action thus in these cases also appears as determined by especially forceful stimuli to react as though we were isolated elemental parts, and without dependence upon the forces which would guide us if we acted exclusively in accord with the demands of that *quasi* organic social body to which we belong.

We are led to this view especially because we seem to be able to identify reasoning processes with the highest elaboration of the emphasis of environmental stimuli upon the individual who reasons. And if the thesis above defended be correct, the variation described in complex organic forms is determined partly indeed by the degree of integration existing between the members of the aggregate, but partly by the forcefulness of the stimulus which reaches the element from its environment; this latter being the efficient factor.

Now as we find in our highly differentiated life that in great measure the process of reasoning is that which determines our revolt against instinct, and our variations from the ancestral type; it seems highly probable *a priori* that we shall find ratiocination to be the conscious side of the latest development of the elemental variant process, and in the ensuing section I shall endeavour to give an argument which seems to me to corroborate this view.

Sec. 15. As we well know, there exists in all organisms, to speak first of the physical aspect, a balance of activities fitted to answer to environmental conditions; and furthermore (*a*) it seems clear that if one element of a complex organism alters its activity

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in consequence of influence from without itself, this one alteration of one element will tend to effect alteration of the relation between the actions of all the elements of the organic system to which the changing element belongs. Furthermore (β) if this one element's tendency to alteration of the relation of its activity to that of the organism *persists* with sufficient strength, there may result a variation of the action in that organism from its ancestral type.

Now evidently this course of action must have its correspondents in the mental life that is coincident with the action, and I think that this same process can be shown to be effective in the higher mental life as we experience it. In correspondence with the action described under (α) above, it seems clear to me that if, in any case, one psychic element in a mental complex becomes hypernormally effective it will tend to restrict the natural psychic development of the mental complex to which it is attached; this natural development which is thus restricted being determined by inheritance or individual adaptation. Furthermore in correspondence with (β) above, it seems clear that if this effectiveness becomes *persistent* it will tend to alter the typical psychic development, which will take on another form than that which it would naturally develop in consequence of inheritance or previous adaptation. In other words, this action will tend to overpower instinctive, or *quasi* instinctive, leadings in favor of elemental variation.

This whole process on the physical side is determined, as appears above, by the persistence of the activity of some one physical element, and this persistence in turn may be held to be determined to a great extent by the *reduplication of the stimulus to action in an organ that is prepared to react efficiently.*

In the region of the correspondent mental development this means the reduplication of the stimulus to the recurrence of the idea which therefore becomes persistent and effective.

But on the psychic side the latest elaboration of the process of becoming persistent is apparently the same thing as the process of ratiocination. It consists in this.

It being recognised that a leads to x and that b leads to a; it results that whenever b occurs, x follows, as happens also when a occurs. Hence the process of identification of the issues of a and b in x tends to a duplication of the stimulus to the resultant x and hence tends to the *persistence* of x.

But this process of the identification of the issues of a and b in x is the basis of the syllogistic form to which all ratiocination is reducible; viz. if a then x; if b then a; if b then x.

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This argument therefore leads us directly to the statement that *ratiocination is the psychic aspect of the latest elaboration of the variant principle within us.*

Sec. 16. The suggestion then which it seems to me biology may gain from this special psychological view in reference to the nature of variation is that organic variation is probably due, in large measure at least, to the tendency of elements in organic aggregates to react as though they were isolated entities, rather than integral parts of a complex systematized unity; acting thus whenever the force reaching them from their environment is so emphatic that it overcomes the forces inherent in the organism of which they are elements, or compels reaction before sufficient time has been allowed for these organic forces to become effective.

The difficulties which appear when we attempt to express our complex life of apparent indeterminateness in terms of so simple a formula must not be overlooked: but on the other hand it must be remembered how numberless must be the systems within systems of integration which must affect the individual elements of a social body, which is determined by the aggregation of individuals like ourselves, each one of whom is moulded by such varied influences inherited from the past.

I have attempted thus at some hazard to present in outline an hypothesis by which we may state a great mass at least of the phenomena of organic variation in living bodies entirely in terms of what is known of the interaction of forces in the world in which these living bodies exist. If it appear that this hypothesis is not available I nevertheless am convinced that some other explanation than that here presented will be found that will enable us to account for these objective biological phenomena in terms of objective physical efficiency; and will render needless the subterfuge of the assumption of an extra-physical efficiency, whether this be expressed in the doctrine of special creations, or in that doctrine of interference by consciousness which we discussed in our first article, and discarded.

And if this explanation of variation in terms of physical efficiency be found, we shall then be thrown back to the mystery of life itself: to the problems connected with the origin and nature of assimilation and growth, of action and reaction: to the investigation of the causes which bring into existence that reverberant continuum in physical objects and in mental experience; that reverberant continuum which on the one hand we recognize in *life* and on the other hand in *consciousness.*

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VI.—CRITICAL NOTICES.

Studies in the Hegelian Dialectic. By JOHN M. E. MCTAGGART, M.A., Fellow of Trinity College, Cambridge. 8vo. Cambridge. 1896. Pp. xvi, 259.

HITHERTO, with slight exceptions, the studies in Hegelian philosophy published in this country have been chiefly in the line of exposition. Criticism has in the main been incidental, and found in works dealing with Hegel's views on special questions whose discussion engaged the chief attention. Mr McTaggart's book marks a distinct advance. It is a thoughtful and acute attempt, conducted with marked good taste and ability, to determine what Hegel actually tried to effect and how far he succeeded, to clear away misconceptions as to his method and its relation to ordinary experience, to point out problems which Hegel suggests to reflection but cannot be said himself either to see or to give a solution to, to indicate some directions in which his system seems to need supplement or correction, and to examine the value of his philosophy in general, as well as of certain applications he made of it to the several departments of sociological history. Even for those who are unable to accept all its conclusions it is a stimulating and enlightening book, full of quiet reflectiveness and penetrating remark, and high-toned in its conception of the problem of philosophy.

The seven chapters conjoined under the title of *Studies in the Hegelian Dialectic*, if they do not exactly form an organic unity, offer at least a fairly continuous discussion of certain difficulties and corollaries which sooner or later present themselves to the student of Hegelianism. They fall, it may be said, into three or four tolerably distinct groups. In the first of these groups will go the three chapters (I.—III.) entitled 'The general nature,' 'Different interpretations,' and 'The validity,'—'of the dialectic.' Too much should not of course be expected under these somewhat comprehensive headings. The three chapters are written with, on the whole, a definite reference to views taken of Hegel's work by critics of the two generations since his death (*e.g.* by Trendelenburg, Herr v. Hartmann, and Prof. A. Seth), and offer a line of arguments narrowed (even if it be also pointed) by the occasionally accidental and personal qualities of the objections against which they are

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directed. Such objections to a large extent are but symptomatic of the course of development in the individual soul which makes them, and to deal with them in a satisfactory way would require (as, obviously, one cannot hope to traverse the endless multitude of single censures) either to assure ourselves that they may safely be taken as typical of the dubieties raised by Hegelianism in the average human mind, or to seek to discover the fundamental views as to the problem of philosophy, as to the relations or no-relations of thought and reality, to discover (—to put it roughly) the *idola* of the den and the theatre, which underlie and give growth to the incessant efflorescence of cavils. Instead of this all but impossible method of dealing with objectors, Mr McTaggart takes the praiseworthy course of testing general demurrers by a patient confrontation of them with the evidence of the original texts, by distinguishing what is valid in their remarks from what is exaggerated for the sake of a thesis. Probably there are other and more penetrating criticisms of the Hegelian principle and method which it would have been desirable for him to tackle. Those of Trendelenburg were written too much in the shade of that re-action which made asceticism in speculation a positive, and perhaps the sole intellectual, virtue, and looked back on the speculative epoch as a time of philosophic paganism: Von Hartmann's essay on the 'dialectical method' is but a hasty spoil of the times when he was scouring the domains erewhile held by the three kings of thought who reigned before him, and trying to carve out for himself a new realm; and as for Prof. Seth, perhaps one may venture the hope that he will yet employ his eminent conciliatory talent to bridge over the gulf between the deep-rooted instincts of 'personal' life and the 'meditation of death' which seems to take their place when life is viewed 'under a certain species of eternity,' instead of intensifying the inevitable conflict between them by an appeal *ad populum*.

Chapters IV. and V.—which have been already published, 'nearly in their present form' in *Mind* (N. S. 1, 2, 8, 10)—form a second group of different aspect. Ch. IV., entitled 'The development of the Method,' taking the phenomena as presented first in Hegel's Logic, and then in the whole cycle of his philosophy, endeavours to show that in the progress of the Hegelian system the method undergoes a continuous alteration—like an instrument which acquires new capabilities by being used—: that in its beginning the element of negation and contradiction takes a more prominent position than it holds later, so that a period of struggle gives place finally to an easy evolution: that, in a way, the conclusion thus serves to show the incorrectness or 'subjectivity' of the process by which it was reached, or, in other words, that 'the dialectic does not give a fully adequate account of its own nature.' This, it must be owned, sounds at first hearing a very awkward doctrine for the 'dialectic': even though Mr McTaggart is careful to circumscribe its consequences. He further points out that Hegel might, if he had chosen, have adopted for the relations of Nature and Mind to pure Logic a scheme of

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movement, analogous to that adopted in the transitions of Being and not-being, rather than that suggested by the relation of subjective and objective in the 'idea.' To the thesis of this chapter, that Hegel had not himself realised or seen what was implied in the gradual but decisive change from the inadequacy of the earlier categories to the increasing truth of the later, Mr McTaggart attaches much importance: 'it is only,' he remarks, 'by the aid of some such theory' (of a subjective element in the dialectic) 'that we can regard the Hegelian system as valid at all.'

Chapter v., 'The relation of the dialectic to time,' will be to many the most difficult passage in the book. The author is always acute and subtle in argumentation, and the discussion of the place of time in the system of ultimate reality is not a less fertile field of ambiguity now than it was in the days of Augustine. That the development in the dialectical system, both pure and applied, is *not* a development in time (*i.e.* the story of a growth), may be taken as settled: Hegel distinctly negatives the suggestion of so treating it; and indeed the confusion between a record of events and an exposition of meaning seems too gross to be deemed possible. But, it is argued, this technical treatment of it does not really abolish the difficulty. If philosophy is the comprehension of what is, if it aims at 'discovering the ultimate nature of all reality,' and does so by showing 'reality' ordinarily so-called to be an inadequate stage or partial truth of what in its fullest 'realisation' is an 'idea,' it seems not unnatural to say with Mr McTaggart that the purpose of philosophy is to 'establish the rationality of the universe,' and that all idealism (and Hegel's system is confessedly and professedly a complete or 'absolute' idealism) declares the world or universe to be 'fundamentally rational and righteous throughout.' Does not the veriest tyro know that Hegel asserted that whatever is real is rational, and whatever is rational is real? And if so, is not the actual fact, present anywhere, justified; and is not the 'must be' and 'ought to be' of the 'rationalist' invested with a title to existence? Yet 'if all reality is rational and righteous,' how are we to explain the notorious facts of unreason and wrong everywhere protruding? We are, it is obvious, confronted by the 'problem of the origin of evil.' According to Mr McTaggart the solution of the problem lies in accepting both the opposed propositions—that the universe is eternally rational, and that imperfection does exist—and hoping that in some as yet unknown and unsurmiseable way a reconciliation may be found in a higher synthesis. Perhaps this is to throw too hard a task on the divine might of Higher Synthesis, and it may more profitably be asked whether the universe which is eternally rational and righteous is directly identifiable with the universe in which imperfection prevails. Or it may even more profitably be considered what is to be understood by 'eternally reasonable and righteous,' and how far these epithets are clear and unequivocal.

The two concluding chapters (VI. and VII.) treat of 'The final

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result of the dialectic' and 'The application of the dialectic.' The 'final result' or the terminus of the dialectic is made by Hegel to be Philosophy, and one hardly sees how he could do otherwise in an encyclopædia, where philosophy is alpha and omega. But philosophy, urges Mr McTaggart, must be considered to be 'merely a state of knowledge.' Deduct the 'merely,' and the equation seems no great error: but what is the force of the 'merely'? It is the separation of knowledge, *first*, from the thing known, from the 'this' which we know, and then we have before us the thing-in-itself *named* knowledge, but to which neither gods nor men can attach any meaning or allow any reality; and, *second*, its separation from volition and from pleasure and pain,—that pure, disinterested knowledge, which human beings at least neither desire nor care for. Philosophy—so understood as a state of knowledge—cannot (it is further inferred) be regarded as the 'culminating point of reality,' or as the 'supreme activity of spirit'; it cannot even form a part in that supreme activity, for it is for ever vitiated by its antithesis to volition, and by its dependence upon an 'immediate' and a 'given' which is alien to it. Philosophy is not 'capable of acting as a synthesis between art and religion.' It, like them, is 'endeavouring,' (says the author) 'to find a harmony between the individual spirit and the rest of the universe.' But all three alike fall short of their aim. A new synthesis is required: 'some state of conscious spirit,' 'as direct as art, as certain and universal as philosophy,' in its faith, vision, and assurance that all things (ourselves included) are in harmony.

Of the essay on the application of the dialectic the drift is briefly to show that the dialectic itself is worth much more than its applications. 'The really valid part of Hegel's system is his Logic, and not his applications of it.' And if we farther ask what the *value* is of what is thus pronounced *valid*, an answer comes that 'the value of philosophy lies more in the domains of religion than in those of science or practice,' and that that value consists in the 'general determination of the nature of true reality' and in the certainty Logic gives that 'all reality is rational and righteous.' The application of the method to portions of the concrete historical field in religion, law, or art is invalidated, according to Mr McTaggart, by three considerations, *first*, that we have there no fixed beginning or end as in the Logic, no bare rudiment or 'complete realisation' of the 'absolute idea' where we can set our foot down; *second*, that all real life and history is more than logic, that the dialectic process is continually disturbed by external causes; and *third*, that a philosopher cannot possibly have the extensive and thorough knowledge of particulars, which the 'rationalisation of reality'—particularly if understood to be the 'reconciliation of it with our aspirations'—must demand as a pre-requisite. In consequence of the last deficiency it is suggested that a more promising field in which to apply logic will be found by taking abstract (moral) qualities and considering them as thesis, antithesis, or synthesis of other qualities (or *mixed modes*) of the same abstract stamp.

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It is a commonplace that every age has its own difficulties and prejudices; and that each individual also has his own. The thoughts and interests of a period, a class, a single person, are set in a particular direction, and reflect or construct the world in a special way. An age which in the gross may be called idealistic is replaced by a period where realistic currents prevail. Faith fastens at different dates on widely diverse *foci*, or calls them at least by widely disparate names. New catchwords are abroad, new aims pursued, new gods worshipped. We ask the philosopher of other days questions which imply a standpoint he would find it difficult to assume. We want to see him from the outside, all round, as a single object, to be, as it may seem desirable, appropriated or rejected, according to its adaptability or inadaptability to our needs. What to him was at least an effort to reconstruct the world in the light of the Absolute, his readers will for practical purposes treat as only a petty contribution to a task (that of rationalising the mass of things) which each reader must *de novo* undertake for himself. But so to take stock of themselves—to put themselves in a nutshell—to adjust themselves for consumption by the public jaws—is what the great thinkers have not done, and could not do without self-derogation and self-destruction. Hegel, in the introductory chapters of the *Encyclopædie*, made an attempt: but it was not more successful than Wordsworth's exposition of the theory of the relations of Nature to Art and to Man which governed his poetry. He had not studied his own method from without: it was not—for him—detachable from its subject-matter, just as, conversely, the subject-matter was not detachable from it. Such a subject-matter, detached and made a body of dogma, would be but dry bones, suitable for a museum: such a method, reduced to an abstract trick of manipulation, would be but an instrument of logomachy.

Hegel has spoken more than once of the movement of thought in his argument as that of the matter or fact itself (*der Sache selbst*). He did not mean that the abstractly objective did or could move: that a selfless world could exert the life of change. The *fact itself* of which he speaks is the real world which is a unity of subjective and objective: it is a thought-permeated objectivity, and a subjectivity which has made itself at home in external body, and is no longer a floating will-o'-the-wisp of opinion. When Hegel's Logic begins its dogmatic march and enters on the *sicheren Gang der Wissenschaft*, the processes of nature and history—and especially that of mental history (and Mind is always and *par excellence* the Historical process—*das Historische*) have been already traversed. It is a fundamental hypothesis of his system that philosophy as self-contained knowledge is a circle—that it returns into itself—and that the beginning has its full force only for him who has gone already through what is called its end. The mind which logicises is a mind which, if it at its one end grows out of the organised concretion of space and materiality known as *homo sapiens*, attempts at its other to raise itself up to, and seek a higher firmanent in, that

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spiritual structure of the Idea, which is the intangible and inapprehensible God, as he may be said to exist (if such being can be called existence) before the realm of nature and the realm of history (which is freedom and humanity) had emerged. If this be kept in mind,—and it is implied in Mr McTaggart's phrase that the process of Hegelian logic is a reconstruction, rather than construction,—it seems to cut away the ground from some loose talk about 'pure thought,' about the passage from Logic to Nature, and about the relation of philosophy to religion and art. A parallel case may set this in a clearer light. Just as Kant is sometimes estimated on the basis of an arbitrary restriction of his teaching to the more palpable features of the Criticism of Pure Reason, so Hegel has suffered by the subordination of his philosophies of Nature and Mind to the Logic. Nor is it sufficient to say that the Logic presupposes experience: that it is based upon the general nature or 'common characteristics of all experience,'—an experience which contains within it the 'nature of pure thought' to be elicited or ascertained by dialectic. 'Experience' is but a vague, much-worn word; and, like its neighbour 'reality,' it is employed perhaps a little too much as a conjuror's cry. The specific experience which philosophy always, according to Hegel, presupposes is an experience which has in it the characters of morality, art, and religion: and the still more specific experience which Hegelianism presupposes is the concentrated ideal life in the *Geisterreich* or World of Soul, Mind and Spirit, which is the abiding fruit gained from the historic movement of art and religion, and above all of philosophy. The bare shell of experience is and gives nothing: we must know what it is an experience of: for experience is not a reality, a self-subsistent, nor on the other hand is it so much 'pure thought' combined with so much 'data of sense' or 'matter of intuition.' Data of sense which are 'indispensable and yet negative,' which are 'not positive causes, but conditions' shrivel up into something very hard to talk about,—at least if they are to be talked about with profit.

Mr McTaggart has entitled these interesting and suggestive chapters essays in the Hegelian *dialectic*. He has spoken freely of *categories*. He has used as descriptive of the three steps of the logical movement the names *thesis*, *antithesis*, and *synthesis*. He may plead great example for so doing, and may urge the convenience of distinct terms. But something may be said on the other side. The three last names are the literary property of Fichte, and oust a multitude of very untranslateable Hegelian terms, such as *setzen* and *aufheben*, *an und für sich*, which, with their various shades and—as some may even think—ambiguities, constitute (may one say?) the charm and the stimulus of Hegelianism. The others, I think, give a mechanical regularity and discreteness to the process which, as Mr McTaggart well points out, is or would be continuous and organic. *Synthesis*, in particular, is misleading. No doubt in some modern uses it denotes a finer, ideal composition—an inner and intimate union of hearts and bodies; but it may be doubted whether

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the word can fairly bear this meaning, and it is unadviseable so to treat it, in the face of Hegel's relegation of it to a lower level than that of a 'speculative' unity. 'Category,' again, is a name Hegel occasionally introduces: but it is only to facilitate the way of the historical student—(in a similar way to Kant's so calling the *Stammbegriffe* of intellect), and tends to mix up matters of diverse origin and purport. An elastic term like this has its disadvantages.

The case is somewhat different with Dialectic. In Hegel's primary use it designates a real, though frequently unnoted, phenomenon in life and knowledge, whereby the thing and concept, which temporarily or ordinarily seemed stable, definitive, and simple, turns out to be unstable, multiform and contradictory. Common practical life rests upon the assumption of temporarily ultimate points, absolute principles, and the like. It may, if probed, own them to be relative and abstract, but it deals with them as if they were absolute and total. And it is natural and good for it so to act, so long as it is immersed in the necessities of practical life which insensibly and gradually call up the complementary re-action. It is otherwise when it philosophises and rests in reflection on the single step. Then the context and the complementary is lost sight of; and a series of independent atoms of thought seem to be left as severally real. Theory in its first stage tends to give independent fixity to elements which life keeps flexible and organic. It is the business of a higher philosophy to find a more adequate expression of concrete experience than the ordinary efforts of reflection, divorced from life and action, are able to supply.

The business of dialectic, therefore, in its most legitimate sense, is to be the bridge which continually throws itself out to span the abyss between the land of so-called common sense, or first impression of ordinary reflection, and the land of reason or philosophy. It serves to demonstrate that the irrefragable data and solid ground of the theorising practician are not really so solid and impregnable as they seem. In practice no doubt the impermanence and the interdependence of things is again and again flashed upon even common observation. But in the world of theory which is for ever being built up by man, this truth of observation is forgotten, treated as an extrinsic and accidental phenomenon of things, instead of being recognised as what Plato has called a *πάθος ἀθάνατόν τε καὶ ἀγήρων*. 'To be a philosopher,' says Nietzsche in his drastic way 'is to be a mummy.' That at least is the common danger of the hasty theorizer. His ideal world leaves out the pathos and the action of life, and converts it into a statuesque collection or a mechanical conjunction of what are called ideas. This is where Hegel pressed his dialectic into service,—to shew that these ideas, even when hardened into the stability of things, have intrinsic and intestine life and motion. It is directed against the half-and-half measures of popular philosophy —of the philosophy which seeks a comfortable pillow of sound principle to sleep again, and which perhorresces nothing so much as seeing a 'bacchantic intoxication' convulsing the old stolidly

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respectable ideas. The human mind in its unregenerate nature craves for a πού στώ, some solidly apprehended reality, some impregnable rock of experience, whence it may possibly seek to move other things, or where it may itself rest in tranquillity. Such a rest Hegel does not give:—or if he gives it, he gives it in the 'absolute idea,' where there is room in 'identity' and 'unity' for all transitions and correlations and developments through negation and contradiction; or he gives it in that absolute philosophy which includes all that is true in art and religion, and, in including, transcends and transmutes. But the absolute idea and the philosophy are both unlike the rest of sleep: and if they are to be called reality, then reality is that immeasurably far-off divine event to which all things in their finitude move, as from it in their finitude they proceed.

The function of the dialectic is therefore mainly introductory. It is none the less eternally necessary. Here and there, in every tongue and tone, some reflective spirit cries that he has found the solid bit of fact, reality, experience, out of which he will (—if you allow him time enough, and operations sufficiently multiple of memory, construction, generalisation, abstraction, and so on—) build you up the real round world you know. Only let him sit on his patch of the solid earth of present reality and primitive apprehension, —even though his datum, or given, be a very little one—, and he will be at ease. Hegel's whole energy is engaged in a contest against this belief in a *datum*. Make it as small as you like—call it pure being: and his argument tends to shew that you have got nothing. You say you do not want a pathological process of knowledge; a knowledge which grows through disturbances and tempests and morbid states: you would like 'pure health,' a normal and natural development. Hegel replies, you are crying for the moon: pregnancy and birth have their morbid features: all life is tainted with sickness: nay, all life is lived only through the victory over perturbing elements; and if the conquest be too thorough, and the struggle collapse through want of antithesis, the life itself is at an end. You would like positive, out-and-out positive, truth. But truth only lives by the side of error: it has its value and validity only in the error which it serves to refute, *i.e.* to explain: remove the error it lives upon, and the truth hangs flaccid and sere. In ordinary every-day experience this dialectic, as we have seen, goes on quietly enough. But it assumes more terrible proportions on the field of history, when ideas have, by causes not here to be discussed, grown into great concrete powers, and summed up in a single term the result of long processes. Then the phenomena are called disease. But there is no absolutely normal health—except in a visionary standard which only youthful impatience can expect to see realised in his own sturdy growth.

But Hegel has not used the term 'dialectic' as the supremely descriptive name of his method, or made it, as Mr McTaggart does, serve to cover the whole process of introducing order and connection into the mass of terms and forms of thought which are built into the

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fabric of reality. Dialectic proper perhaps belongs most to the field of what Hegel at one time called *Objective Logic.* Objective Logic deals with a number of 'categories' or 'kinds of nameable things' which are taken as, in a way, part of the 'external' universe of fact, bits of reality. There are other categories—more commonly taken as 'forms of thought'—which fall within the scope of what Hegel once called *Subjective Logic.* These, such as final cause, and the formulae of judgment and conception, are treated as ideal vestments on reality: ways the human mind has of putting together or disjoining facts which are in the last resort independent of this dressing. Hegel's purpose may be said to be to break down the absoluteness and ultimateness of this distinction. It was not a new step, but only a systematic prosecution of a view which had come out decidedly in Kant, been deepened and extended by Fichte and Schelling, but had never been absent when philosophy went vigorously to work in its effort to unify the theory of life. That view had been that the so-called objective is essentially a subjective-objective: that not merely in the modal or properly logical terms, but also in such as put forward a claim to metaphysical, and even materialistic value, there is the pulse and life of subjectivity. With being, you suppose yourself to be on the ground of reality: you fancy that on given qualities you can build as on primitive rock. Causes are valid, you say, even if final causes are foibles: there is power in number, even if organism be an ill-compounded mode of synthesis. But the Hegelian logic claims to shew that if you are safe on being, it is only because it is one plank on the deck of the ship of thought, and that the single solid plank involves and postulates the concrete complexity of the whole structure. If you are in earnest with being, or trust the data of intuition (apprehension), you are committed to the absolute idea, *i.e.* to the concrete system of correlativity, transition, and development, which is the god of the abstract logical world: and in the long run you are committed to something larger still, to an organic natural realm, and to the omnipresence of intelligent and volitional life. It was this conviction which in partial and therefore paradoxical shapes led to the Berkeleian theory of vision, to the analysis of the more abstruse ideas by Locke into simpler co-adjusted elements, and to Hume's much maligned interpretation of causality in things as connection between thoughts. It is the same principle which in Descartes appears in the personal form, *cogito, ergo sum,* and in his finding the safeguard of each single perception in their coherence with that supreme harmony of all true or 'perfect' reality which he called God. What merit Hegel has is perhaps only the persistent exploitation of this idea throughout the whole range of terms in which blank and bare reality emerges into name, inter-relation, and value. The real world in its essential fabric is a work of ideas: while the admittedly ideal terms are only the development to a further stage of what has come to be commonly taken as real and constitutive of reality.

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But dialectic is after all only the negative side of his philosophy: and Hegel does not rest content with the demonstration of the power of negation, even in the highest. His own name for his method would be Speculative: and as Speculation he designates the positive and unificatory operation of intelligence which holds contradictions in unity and identity. But the 'unity' and 'identity' of contradictions does not, however crassness or perversity may assert, mean that it is all the same whether we say yes or no. It means rather that the meanest of God's creatures boasts at least two soul-sides, one to show to the world and the enemy, another to show to the self and the friend. It means that in the view of science or fuller knowledge, the simplicity which is the assumption of practical life is an illusion. The plain man and the practical judge expect a plain answer, yes or no, to a plain question. But the investigator and the criminologist have learned that plain questions and plain answers are only possible for those of hurried and blunted senses; guilty and not-guilty are terms of a limited province and are conditioned in their application by a social convention. The plain answers are neither quite unreal nor quite untrue, be it added: hut they are not expressive of the whole truth or the whole reality. The problem which is strictly called speculative is to find a more adequate expression, to formulate the question in terms which will allow a more equitable answer. But it must not be supposed that the speculative simply undoes the effect of the dialectical act: or if we say that it reconciles, reconciliation does not consist in glossing over or ignoring the opposition. We may declare that the disruption is overcome, or cancelled, or suppressed, or transcended: but we shall misinterpret these terms if we think that thereby that which once was has been made as if it were not. The 'new life which rises upon the ruins of the old' is a phrase which, as is the way of metaphors, makes us forget that the new life owes its structural grace and wealth to the fragments and jarring elements which it reconstructed. Mr McTaggart remarks that 'if we find contradictions in our notion of a thing, we must give up its reality.' This seems an unnecessarily hard saying. No doubt contradiction is a symptom of incompleteness and therefore of comparative unreality or defective 'truth.' It is a sign that you are not on the absolutely solid ground. But the ground may be fairly real ground for all that. A pure unreality would hardly be worth the trouble of contradiction. It is only the 'concrete notion,' says the author, which is 'found in the world of reality,' and he tells us that according to Hegel 'thought can only *exist* in its complete and concrete form' as *absolute idea*. Surely there is exaggeration and misconception present or suggested here. The world of reality in which the concrete idea is found existent is not the world known as real to ordinary mortals: for them its light is not visible on sea or land: it is a world which for him who has eyes only for the actual (das Wirkliche) is a veiled world. The full and concrete notion—the 'absolute idea'—surely only *exists* (if the word is even there appropriate) in the

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totality of nature and of mind, in the universe natural and spiritual. But the absolute truth ('truth' and not 'reality' is the Hegelian term of supreme sweep) does not annihilate partial truths, and seat itself in their place. Apart from their partial reality or truth, it itself were the emptiest reality and the poorest truth, just because the most pretentious. The Absolute must not merely have room for, but must contain, all the Relatives: the concrete, contain all the abstracts: the harmonious unity, all the contradictories.

Mr McTaggart remarks that in the Logic we have fixed points at the two termini: Being at the commencement and Absolute idea at the close. He speaks, it often seems, as if they were two points as realistically defined and located as the two ends of a road. But this may be misleading if we forget that the road leads across the infinite and eternal. The start with being is equivalent, he thinks, to the postulate that 'experience really exists,' or that 'something is': the dialectic '*assumes the validity* of the idea of being.' What precisely is meant by 'validity,' I hardly feel sure: but in any case I do not think the philosophy which characteristically asserts that 'Being and Nothing is the same thing' can have a very high estimate of the idea of being and its validity. It would be truer to say that the dialectic *demonstrates the invalidity* of the idea of being (—that impregnable stronghold of those who fear the eddying tides of thought) until it has been supplemented by factors which are decidedly idealistic, subjective, thought-born. And 'Is' which is no more than a bare 'Is,' being in its blank purity, far from serving as a solid standpoint, is a tight-rope from which you are incessantly rolling off into nought. It is the beginning of the dialectic, not because it is warranted by the common nature of experience,—(the common nature of experience, if it can warrant anything, can warrant a great deal more than the bare pin-point of being), but because as mere or pure being it is the pole of truth in closest contact with nonentity, and at an inappreciable distance from it.

But if *pure* Being is the minimum of reality, what shall be said of the Absolute Idea? One may have the highest respect for the serried array of the dialectic, and feel unable to detect a serious flaw in the links of its chain; one may be amazed at the incompetence which allows some of its critics first to mistranslate and then to misconceive its argument; and yet one may not be clear that here is the absolutely fire-proof structure of thought, embracing all details, and complete for all time to come. Even a disciple may regard his master as human, and be content if he finds in him a light to lighten the past and to convert its chaotic voices into harmony or at least coherent speech, though he fails to prophesy unambiguously of the after times. As Hegel approaches the terminus,—the absolute idea (in Logic) and philosophy (in Mind),—he grows terse, and enigmatic. And why? One may say with Mr McTaggart that the 'Idea' is 'the idea of the human mind, acting theoretically or (and?) practically.' But this is but a piece of verbal information, till we *know* the human mind—know it, as Plato says, not in its crushed and degraded or

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'degenerate' form on these shores of time, but in its pristine or perfect (eternal) nature as revealed in philosophy. And when that knowledge comes, shall we be anxious to retain the epithet 'human' as distinct from 'superhuman' and 'divine'? The 'absolute idea' can have little said of it, because it represents a postulated maximum,—just as the other terminus (being) represented a minimum,—of truth. Once we get beyond 'Object' in the Logical order and enter on 'Idea' we cross the Rubicon which separates the philosophic movement, as it was directed by Kant and his successors, from all the past. Up to that point Hegel had been reproducing what may, not irreverently, be called ancient history. In the rest of the Logic he is engaged on the modern field—a much more complex and concrete field. The relation between life and intelligence, between intellect and will, the problems of Schelling and Schopenhauer, the questions of evolution theory, emerge and come to the front. But even if 'organism' and 'vitality' were clear and assured conceptions, (and they are far from being so, they are rather battle-grounds of the advanced sciences), it is difficult to surmise how we are to go beyond them, and where we shall find ourselves if we do. We may say with Mr McTaggart that 'the universe is a super-organic unity.' But just as 'organic' gets most of its meaning by its antithesis to 'mechanical,' so super-organic is only a *plus ultra* sort of word, tending to indicate that 'organism' is not the mountain summit, but only a subordinate height of truth. 'Absolute idea' therefore can only be regarded as a name for the problem of philosophy, not as a solution: it emphasises the need of a synthesis. The very title itself (with its epithet *absolute*) suggests this: and Hegel's (like Kant's) use of 'knowledge' as a genus embracing the two species of theoretical and practical reason hints the same approach to 'undiscovered territory.' When the idea is absolute, it ceases to be only idea.

I cannot agree with Mr McTaggart therefore when he speaks of the highest category as 'without contradictions.' A nursery rhyme tells of the tumultuous and interesting scenes of life and death that were transacted in relation to the House that Jack built. This House so built is in its way a supreme category: but I think it would be a rather lame affair if all the contradiction and negation of which it was the centre were removed. The pith of the story would be gone. So when we are reminded that in the advance of thought and knowledge 'the presence of negation is a mere accident, though an inseparable one, and that its importance continuously decreases,' one may in a way admit that the later chapters have less of it, and yet seek the causes in other quarters. These causes are partly that this part of the Logic had been treated in the 'Phenomenology of Mind' and comes up again in the discussion of organic and mental phenomena: partly that the battles on this field were largely yet to fight, and that not even a Hegel can anticipate the debates of the future in their detail.

It is Mr McTaggart's conviction that 'reality is not in its truest nature a process, but a stable and timeless state.' I pass over the

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antithesis of a process and a timeless state, and its implications: they are perhaps scarcely in accordance with the statements of chapter v. I must note that Hegel speaks not of reality—which to him is a very subordinate category—but of the Absolute, when he describes it (if and when he does describe it) as a process. But I think it is impossible to accept the description given by Mr McTaggart as true to Hegelianism. The absolute—the Hegelian God (if we for a moment adopt language of accommodation which will not improbably mislead)—is at least Life, at least Ego: and if these are not process, self-surrendering, self-renewing process, it is difficult to see where we are to look for examples of process. To speak of Him or It as the 'supreme being' or 'ultimate reality,' as the 'reality which underlies all finite things' is to use expressions, capable perhaps of profitable interpretation, but which certainly lead, by their obvious suggestions, towards the cave of Spinozan substance, rather than to Hegelian Subjectivity,—which is Personality, or rather Tri-personality. And there is in Mr McTaggart's language if not in his thought, a recurrent proclivity in this direction. It shows itself in the pre-supposition of an irreducible minimum of being as datum, an undeduced and given This; a reality which lies behind and which 'the inadequacy of our finite thought' never permits us to express completely; a reality 'supplied by sense,'—sense without which 'we can perceive nothing of the nature of thought.' It shows itself in the dictum that it is the office of thought to mediate, and *only* to mediate: to 'relate' alien elements, given and apprehended somethings. When it is added that 'thought actually exists, or it could not mediate,' we are face to face with the old mythology of 'efficient' causes, powers which mediate like persons, and are entangled in the inextricable confusion between thought, the thinker, and his thoughts. As against it, here is only space to say that a thought, which *only* mediates, must presuppose and postulate another (if it be another) thought which calls for mediation and submits to it: a thought which, to use language we have already demurred to, is synthesis, antithesis, and thesis,—which

Creates, creator and receiver both.

Thought mediates: but to do so, it has to be more than a mediator, and must have in it the natures of the two extremes which it reconciles, otherwise its would-be mediation is waste and nullity, or accident. The only ground for holding otherwise would seem to lie in a confusion of terms. Say that an unrelated being is as good as nothing, and you are immediately supposed to have been refuted, if it is pointed out that by your own admissions the being must *be* before it is *related*. The refuter does not take 'unrelated' in all its bitter truth, its absoluteness and utterness: he still leaves it in its comparative sense, indicating the absence of those relations without which the being may still exist and perform its function.

There is however another feature in Mr McTaggart's conception of the dialectic process which has to be noted in this connection.

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We have seen already how he supposes negation to be banished from the bosom of ultimate reality and contradiction to be removed from supreme truth. He prefers, it is evident, the faith and the historical event of religion to the triplicity of syllogism into which philosophy dissolves the tale. If it be the declaration of religion, as he says, that 'all things are dependent on a reality' in which our ideals find their embodiment, if religion, as Hegel suggests, keeps in the view of suffering humanity the prospect of a glittering rest which lights up the scene of present toil, philosophy certainly endeavours to 'secularise,' *i.e.* to reduce to an immanent law of life what revelation presents as an event and a drama. But does philosophy supervene as a new stage, utterly differing from what has gone before? Is it, as we have heard it called, a state of knowledge only? To say so of Hegel's conception of philosophy, is,—one need not put it more, and one dare not put it less, bluntly—seriously to misconceive Hegelianism. When Hegel says (*Ency.* § 554) that 'religion is the general title of the supreme sphere' of intelligence, he only expresses his prevailing tendency to accentuate that religious tone and aspect of the higher mind which he accused even Kant, and still more his predecessors, of unduly neglecting in their systems. Philosophy no doubt is knowledge; but even distinguished critics have failed to show that it is *only* knowledge. It is the knowledge of religion: the *credo* as *intelligo*. Philosophy (to Hegel) is that stage of truth—the highest, if evanescent, vision of reality—which is called religion—turned, or attempted to be turned into the grip of a pervading principle of immanent life and conscious action, not set in antagonism and relief to the present actuality, but read more and more into it, and in its turn steadied and interpreted by it.

I do not think the dialectic intended to teach us that 'matter must be reduced to spirit,' unless that means that in vulgar matter (so to call it) there are promises and potencies which call for revelation or manifestation. It is not the case, I submit, that, in Hegel's view, 'explanation by a higher category relieves us from the necessity of finding a consistent explanation by a lower one.' Hegel had read his Anaxagoras and his Leibniz to better advantage than that, and knew that the supreme Νοῦς never works without the instrumentality of machinery, and that final causes never supersede, but only complete, the laws of mechanical causation. The higher categories are not thus ungrateful. If theirs is the glorious prerogative of crowning the edifice, it is a prerogative which only the patient and laborious co-operation of many minor craftsmen made possible. No doubt we all feel sympathy with the critic who complains that the three volumes of Hegel's Logic, with their recurrent demonstration of the inadequacy of concepts whose practical reality and use we all accept, are a weary pull up barren steeps. But it is—according to Hegel—only on the partial truth of these materials of which dialectic proves the partial inefficiency that the higher and distant stages of the pyramid of knowledge can be reached. And each later category has to keep—transmuted and

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adjusted—the earlier, not leaving them behind. It is therefore questionable policy to declare that 'philosophy can tell us *a priori* that nature and spirit do exist.' When it so speaks, philosophy perhaps reveals no more profound secret than M. Jourdain heard when he learnt he had been talking prose all his life. Phrases, like '*a priori*,' and 'deduction,' are out of place in this phase of method, and serve only as stumbling-blocks. If philosophy can predict nature and spirit, it is because nature and spirit have produced or grown into philosophy.

Lastly, a word on some phrases by which the purpose of philosophy is here described. It 'aims at discovering the ultimate nature of all reality': and its final conclusion, we are informed, is, at least for Hegel, that 'all reality consists of spirits which are individuals' or of self-conscious beings existing only in their connection with one another,—a connection which is closer than an organism. Such is the ontology; and it has beside it a theology which declares God to be 'the reality which underlies all finite beings.' It would have been desirable perhaps to give more definite justification from Hegel for the assertion that he had arrived at the former conclusion, and to supply some indication as to the relation between the reality which *underlies* appearance and finitude, and the reality which *consists of* individual self-conscious beings. But when it is stated that, according to Hegel, philosophy is the 'culminating point of reality,' we fall into an almost grotesque bundle of equations, to correlate which will require an interpretation of God, philosophy, and reality involving a portentous effort of reconstructive thought. 'Reality' at least will not help us much in these latitudes, when it has become as empty a term as *thing* or *being*. But I do not linger long on these ontological dogmas: for—as Kant long ago remarked in his 'Dreams'—it is not easy to say how much you commit yourself to when you cross the boundary into Spirit-land.

Philosophy however has its less metaphysical side. It 'establishes the rationality of the universe': and Hegel himself is said to show that 'the universe is fully rational,' 'altogether rational and righteous.' A German poet, Novalis, I think, is reported to have said that though philosophy can bake us no bread, she can give us God, freedom, and immortality. Not on one side only, but on both, this aphorism smacks of the enthusiasm and pseudo-idealism of the Romantic epoch. Directly philosophy can do the second as little as the first: in her place in the organism of intellect she can help much both towards better bread, and a worthier life in the light of these three ideas. But let us not be in a hurry to suppose that a discovery of the harmony of the universe, its rationality and righteousness, will reconcile it with our aspirations or with our ethical needs, at least unless we first make our aspirations and our ethical needs both rational and righteous. Our aspirations are no doubt legitimate in their way, and our ethical needs are possibly even 'daughters of the voice of God'; and so are in another way the harmonies of art and the consolations of religion. But the righteousness of the true

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and rational world—of the kingdom which is, in a practical sense, to come, if it be also the kingdom which is within us—exceeds the righteousness of the Scribes and Pharisees. And we are all perhaps in our lower moments to be found in the camp of the Scribes and Pharisees. We are proud of our justice and our benevolence. But *Fiat justitia, ruat caelum* is but a relatively-worthy flaunt cast at weak-kneed pity. The righteousness and rationality of the world intelligible may not entirely square with our notions borrowed from our earthly jurisprudence and our practical aims. If philosophy therefore seeks to rationalise the world, it does so in continuation of those efforts which in all ages have been made in the direction of realising the unity and coherence of all being, in carrying ever further the process of discovering and constituting the truth of things, the harmony of mind and nature, the synthesis of all the aspects and appearances of experience. Of ultimate and absolute reality it will say positively and dogmatically but little, though it may hint much of what we have to do in temporal and relative service to further the coming of the kingdom of truth.

W. WALLACE.

Histoire de la Philosophie Atomistique. Par LÉOPOLD MABILLEAU. Paris: Félix Alcan, 1895. Pp. vii, 558.

IT would be ungracious in the extreme not to recognize with approval the diligence and wide range of information testified to by Mr Mabilleau's work; at the same time, it would be futile to overlook the fact that the book, even in its best parts, is little more than a clear and pains-taking compilation from well-known authorities, and that where the author departs, as he does from time to time, from his general rule of dependence on predecessors, it is commonly for the worse. Hence it is almost unavoidable that a reviewer, the nature of whose task compels him to dwell rather on those points in which Mr Mabilleau errs by diverging from Zeller or Lange than on those in which he rightly agrees with them, should appear to be doing less than justice to a work which, with all its mistakes, contains a great deal more truth than error. To guard myself in advance against the charge of undue censoriousness, I should like therefore to say something at once about the general merits of the book. It may be freely conceded that Mr Mabilleau's exposition is, as a rule, lucid and straightforward; if he is occasionally obscure, the fault seems to be due more to a certain incapacity for profound philosophic thought than to difficulty of expression. I will go further; Mr Mabilleau's most serious mistakes are, after all, in the main, mistakes in detail; if we put on one side certain somewhat baseless and fantastic speculations about the influence of Indian systems on Greek, and Arab systems

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on modern thought, such errors as remain do not, perhaps, vitally affect the value of the work as a general account of the growth and development of Atomistic conceptions. That Mr Mabilleau should have gravely misrepresented this and that philosophic system on points of detail may render his work useless for the special student of a particular period of ancient or modern speculation, but scarcely deprives it of all its value for a reader who is more concerned with the growth of certain general leading ideas than with the detailed interpretation of Heracleitus or of Locke. Defects which would be fatal to a special monograph on any one of the numerous philosophies which Mr Mabilleau passes in review may easily become of only secondary importance in what is practically a history of physical speculation "from the beginning until now." And it might further be urged in the author's defence that he has at least the candour to furnish the materials for his own refutation. If he has frequently committed himself to over-hasty and one-sided generalisations, he has, in the majority of such cases, generalised with equal confidence in the opposite sense somewhere in the course of the next ten or twenty pages. Mr Mabilleau's book falls most naturally into two sections, each with its prologue and epilogue. We have, first, the history of Atomism among the Greeks, prefaced by a short account of the Atomist philosophers of India, and followed by some general reflections on the distinguishing characteristics of the ancient forms of the doctrine, and, secondly, a history of Atomistic metaphysics from Gassendi to the present day, with an introductory disquisition on the traces of Atomistic ideas among the Mohammedan theologians of Bagdad and the Alchemists of both East and West, and an epilogue dealing with the modifications and developments given to the theory of Atoms by modern experimental science. Such criticisms as I feel called upon to make upon Mr Mabilleau's execution of this ambitious design will deal mainly with the first of these two sections, and that for more reasons than one. In the first place, it is only ancient Atomism which we can study and analyse as a complete and finished whole; it is impossible to criticise with anything like finality a body of views which are still in course of gradual transformation and evolution. While, secondly, the valuation of modern Atomic theories, from the nature of the case, is rather the task of the chemical or physical expert than of the student of general philosophy.

Into the examination of Hindu systems of thought with which Mr Mabilleau opens his work I am not qualified to follow him. I would point out however that, even on his own shewing, the evidence is all in favour of the dependence of India on Greece, rather than *vice versa*. In the utter uncertainty as to dates which seems to beset all our knowledge of Sanskrit literature it is impossible to appeal to external evidence to settle the question either way; the appeal (p. 2) to the authority of Iamblichus for the existence of Mochus, a Phœnician Atomist of the era of the Trojan war, is quite worthless and is probably not more than half serious,

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in spite of the attempt of the author (p. 11) to bring the Neo-Pythagorean tradition on the point into line with his own theories. The more detailed arguments of Bk. II. ch. I. ("Rapports entre l'Atomisme Hindou et l'Atomisme Grec") are scarcely more cogent, and will certainly not be felt to require refutation by anyone who has read the pages devoted to the subject in Zeller. I will only say here that Mr Mabilleau's facts are not always stated with the accuracy we have a right to expect (*e.g.* p. 57 *vers le même moment*, Anaxagore et Démocrite inventent les homœoméries et les atomes), and that he has supplied in the following chapters the most effectual answer to his own arguments by receding in detail from all the positions taken up in this introductory summary. It may also be worth while just to remark in passing on the suspicious resemblance of the leading categories of the system of Kanada, as presented by Mr Mabilleau, with some of the most familiar technicalities of Aristotelianism. (Cf. pp. 15, 16 Selon Kanada, les objets qu'on peut nommer...peuvent rentrer dans six classes; *substance*, *qualité*, *action*, *commun*, *propre* et *agrégation* ou *relation intime*, qui ont quelque analogie (!) avec les catégories d'Aristote et de Kant.) It is barely conceivable that distinctions of this kind, whose genesis under the pressure of Greek speculation is matter of ascertained history, should have arisen, in such profusion, centuries earlier in an entirely different *milieu*. History hardly repeats itself with such pathetic fidelity.

When we pass from these unstable hypotheses to the actual history of Greek thought, we find ourselves on firmer ground, and can judge of Mr Mabilleau's work with less hesitation. Of his general merits I have already spoken, and what I have said of the work as a whole is, in the main, applicable to the account of Greek philosophy which extends from p. 60 to p. 299. The student of Zeller or Burnet will find little that is new in Mr Mabilleau, except his mistakes, but, for the purposes of the general reader, the book may be commended as containing an account of Greek thought on physical subjects which is eminently readable, and, apart from one serious misrepresentation and two unpardonable omissions, fairly correct in its leading outlines. Of the chief defects of the book I am afraid I must speak rather more at length. And first, it seems open to grave doubt how far Mr Mabilleau possesses the most essential qualifications for the task he has undertaken in the first part of his handsome volume. Those qualifications are in the main three, a sound knowledge of Greek, a clear conception of the affiliation and relative value of the sources, and a tolerable capacity of lucid and consistent thinking. In respect of none of these qualifications can Mr Mabilleau be pronounced entirely competent. It is true that his Greek is not often at fault, but in at least two places he has fallen into blunders which would be inexcusable in an average schoolboy. At p. 174, in discussing the reading and translation of the *locus classicus* in Aristotle *De Generatione* I. 325 A, he is guilty of translating the

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words *καὶ τοῦ ὄντος οὐθὲν μὴ ὄν φησιν εἶναι*... "*et qu'il ne participe en rien à l'être.*" It is true that Mr Mabilleau is only following here the bad example of St Hilaire, but he is following it consciously and "against the light," as is shewn by the footnote in which he defends this translation against Zeller. And at p. 225 we find the doctrine that "the soul is the most perfect of bodies" ascribed to Democritus on the strength of a fragment which the author quotes in the form *ψυχὴ τελεωτάτη σκήνεος*, translating as above. I need hardly say that the mistranslation rests on a simple blunder in quotation; the real text runs *ψυχὴ τελεωτάτη σκήνεος μοχθηρίην ὀρθοῖ*, and, of course, contains no hint of the doctrine which Mr Mabilleau reads into it. These may be isolated mistakes, but their occurrence is surely "significant of much." It is a more serious matter that Mr Mabilleau is apparently in entire ignorance of the results of recent investigations into the sources of our information about the early philosophers. Every writer on pre-Socratic philosophy is of necessity largely dependent on the scrappy and often contradictory reports of the late doxographers and compilers of biographies. Hence it becomes of first-rate importance to be able to trace the statements of these late writers, where possible, to their origin, and to discriminate between those which are and those which are not founded on earlier and better authorities. It is scarcely too much to say that the *Doxographi Graeci* of Diels, in which the task of affiliation has been performed for the *Placita* which have come down to us in a double recension among the works of Stobaeus and of Plutarch, is indispensable for a sound understanding of early Greek speculation. Of this work Mr Mabilleau does not seem to have heard. He never refers to Diels in the course of his book, nor, though he is often led to quote and discuss passages of the *Placita*, does he seem to have the slightest suspicion that he is dealing with any authority earlier and better informed than Stobaeus or the pseudo-Plutarch. More excusable is the absence of any reference to Bäumker's scholarly essay "Das Problem der Materie in der Griechischen Philosophie," though a knowledge of its earlier chapters might have saved Mr Mabilleau from certain extravagances in his account of the Pythagoreans.

Of Mr Mabilleau's lack of philosophical penetration one instance, out of many, must suffice. I will take my illustration from his account and criticism of Democritus, the central figure in his sketch of Greek philosophy. Mr Mabilleau (p. 210)[1] joins Zeller in denying that the unthinkableness of eternal motion through the void is a serious defect in the Atomic theory, for the reason that "all physical science" must assume matter and motion as the data of its explanations; on the other hand (p. 234 ff.) he censures Democritus severely for his inability to formulate a "law"

[1] It is true that at pp. 297, 298 Mr Mabilleau seems inclined to retract this judgment, but I do not know that that altogether mends matters.

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of Atomic movements. Such a judgment apparently ignores the fundamental distinction between Atomism as a physical hypothesis and Atomism as an ultimate theory of metaphysical reality. To formulate the "laws of motion" is the problem of experimental science, and an ancient philosopher is hardly to be blamed for having felt himself unequal to the task; on the other hand, if it is not a serious defect in a metaphysical theory of reality that it cannot be stated without involving the unthinkable, it is hard to see what would be.

As regards the general execution of the first part of his design, Mr Mabilleau must be pronounced happier in his actual description of the Atomism of Democritus and Leucippus than in his account of its origin or its subsequent developments. It is above all in the lengthy chapter on the "Antecedents of Atomism in Greece" that we have to deplore the incorrectness and inadequacy of the treatment. On minor misstatements of fact I do not propose to dwell, though it is melancholy to find all the old blunders about Heracleitus (his doctrine a theory of pure phenomenalism, his fire not ordinary material fire, his λόγος reason as opposed to sense-perception) still surviving after all the refutation which has been bestowed upon them. It is more important to call attention to the serious misconceptions which vitiate Mr Mabilleau's account of the derivation of the Atomistic idea. Those misconceptions are in the main two; the part played by Pythagoreanism is unduly magnified, and the contribution of the Eleatics to the theory correspondingly under-estimated. Stated briefly Mr Mabilleau's view seems to be that the Atom of Leucippus results from the combination of the Pythagorean multiplicity of monads with the Eleatic "One." The conception seems to me fundamentally erroneous. It attributes to the Pythagoreans a direct influence on Atomistic speculation unknown to our best ancient authorities, and is moreover in itself the reverse of probable. The differences between the Pythagorean monad, which is after all simply a visible point, and the atom with its qualities of magnitude, shape, and weight, are too profound for the one to be treated as a derivative of the other. If Atomism owes any special debt to Pythagoreanism, it is surely the infinite void, not the monads, which it has borrowed from the earlier system. The secret of Mr Mabilleau's mistakes on this head is perhaps revealed by his account of the Eleatics. For, as Aristotle long ago pointed out, Atomism was essentially an attempt to compromise between Eleatic metaphysics and physical science. Parmenides, the one first-rate philosophical genius of the pre-Platonic period, had apparently annihilated multiplicity and change in so far as they profess to be the ultimate reality of things; physical science on the other hand cannot do without both. Accordingly Atomism attempted the compromise of admitting plurality and motion through space as real, while transferring to each of its countless "reals" the unity and simplicity which Parmenides had asserted of his "sphere," and explaining all

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qualitative change as due to spatial reconstructions of changeless elements. In fact the very formula, though not the name of Atomism, occurs for the first time in the Eleatic philosopher Melissus, where, arguing, as it appears, against the pluralism of Anaxagoras, he contends that "if there were a Many, each of them must be such as I affirm the One to be" (Melissus, *Fr.* 17). It is perhaps the gravest defect in Mr Mabilleau's work that he has *completely ignored* this important connecting link between Parmenides and the Atomists. Indeed he barely seems to be aware of the existence of Melissus, whose very name, unless I am mistaken, is only twice mentioned in the whole work[1]. (A knowledge of the important fragment just referred to might moreover incidentally have saved Mr Mabilleau from the mistake of treating Anaxagoras *after* the Atomists proper.) By the side of this extraordinary omission the other defects of Mr Mabilleau's account of Eleaticism, though striking enough (*e.g.* he fancies that the physics of the "Way of Opinion" represent Parmenides' own ideas, p. 118, that the Eleatics believed in the infinite divisibility of matter, p. 184), are comparatively insignificant.

Mr Mabilleau's summary of the system of Democritus is fortunately freer from error than the mistakes of the preceding chapter would lead one to expect. Apart from the unhappy mistranslations to which I have already referred, his statements, if not particularly original, are in the main accurate, and he has at least the merit of having taken the right side on the question whether the atoms of Democritus are endowed with weight. What one perhaps misses in his narrative is a sufficient sense of the extent to which the epistemological discussions of the "Sophists" and their famous distinction between "nature" and "convention" have blended with more specifically metaphysical and physical conceptions to influence the doctrine, and even the terminology, of Democritus. (Cf. *Burnet*, p. 1 footnote.)

When we pass from Democritus himself to the chapter on the "Variations of the Doctrine" the misstatements and omissions begin anew. Of the misconception involved in the place assigned to Anaxagoras as a modifier of Leucippus I have already spoken. Equally unfortunate is the ascription (p. 245, note 2) of the technical term "homœomeries" to the Ionian. The account of the Anaxagorean philosophy which follows is perhaps quite the most confused and unsatisfactory part of the work. Apart from the confusion which is bound to overtake an interpreter who fails to perceive clearly that the "things" of Anaxagoras, the "seeds" of which "contain portions of everything," are simply the sensible qualities of the phenomenal world, Mr Mabilleau gets into still

[1] Even in these passing references Mr Mabilleau has contrived to perpetrate a grave inaccuracy. P. 110, Melissus and Zeno "only consolidated and defended" the theories of Parmenides. Yet on one important point, the spatial infinity of the world, Melissus (*Fr.* 8) is in direct opposition to Parmenides.

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further difficulties by attempting, after Zévort, to carry through a distinction between the "seeds" and the "homœomeries" which seems hardly capable of intelligible statement. At least it seems impossible to reconcile the account given at p. 249 according to which the "homœomery" is, apparently, an atom, which, however, is never found in nature except in combination with dissimilar atoms, with the infinite divisibility of matter (cf. *Burnet*, p. 288).

The most serious defect in this part of the book however, and, perhaps, after the neglect of Melissus, the gravest flaw in the whole work, is the abrupt transition from Anaxagoras to Epicurus. A historian of physical speculation might indeed be pardoned for not taking into account the somewhat barren category-making of Aristotle's *Natur-Philosophie*, but it is difficult to find a decent excuse for Mr Mabilleau's absolute silence about the physics of Plato. The mathematical construction of matter in the *Timaeus* is, beyond all comparison, the most brilliant and comprehensive theory of the kind in the whole range of ancient philosophy, and it is almost intolerable that it should be passed over without even a passing mention in a work where no less than thirty pages are given to a detailed criticism of the infinitely cruder speculations of Anaxagoras. And it is adding insult to injustice, after an omission of this sort, to repeat against Plato and Aristotle as "irrefutable" Lange's charges of indifference to physical and mathematical inquiry. In the exposition of the doctrine of Epicurus which closes the history of Atomism in the ancient world there is nothing that seems to call for special remark, except, perhaps, the curiously characteristic inconsistency of the various statements about the origin of the doctrine of the *clinamen principiorum*. (Contrast p. 278, c'est un artifice de physicien, ou, si l'on veut, un reste d'hylozoïsme, with p. 279, where, after quoting the well-known passage, Lucretius II. 277 ff., Mr Mabilleau proceeds, Voilà la véritable origine de la théorie de la déclinaison, although on p. 287 he suggests that this intimate connection between the *clinamen* and the freedom of the will is a "gloss of Lucretius.")

In the brief *résumé* which concludes Book II. Mr Mabilleau indicates what he takes to be the main defects in the theory as worked out by Democritus and Epicurus. Those defects are two: (1)—though this seems hardly consistent with a former passage which I have already commented upon—we need some account of the original impact which set the atoms going; (2) and some theory of the law of their movements. Both requirements, it is hinted, are in a fair way to be satisfied when the physical theory is completed by the addition to it of an extramundane Deity, who is capable of combining in his own person the double functions of ἀρχὴ κινήσεως and intelligent Demiurge. Accordingly we find that the revived Atomism of the 17th century is Democritean Atomism with an added difference; the theistic conception becomes, for the next two centuries at least, an inseparable element in the doctrine. Before passing to Gassendi and the return to Epicurus, however, Mr

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Mabilleau devotes his third book to a sketch, avowedly at second-hand, of the still earlier attempt of the Arabian "Mutakallimûn" or "theologians" to utilise a kind of Atomic theory of matter in their controversy with Arabic Peripateticism. Ignorance of the original authorities prevents my offering any criticisms on this part of Mr Mabilleau's work, and the same reason compels me equally to pass over the following chapter on the "Alchemists" with the single remark that, in any case, these confused Arabic echoes of Democritus can have had no appreciable influence on the philosophers and scientists who brought Atomism once more into fashion in the 17th century. Mr Mabilleau's account of these latter is in every way far superior to his preceding books. As we pass from Gassendi to Leibnitz, and from Leibnitz to the chemical and astronomical discoveries of our own day, the author seems steadily to improve in the quality of his information and in his grasp of the subject. The length at which I have felt compelled to review the first half of the work prevents my entering much into detail about the concluding sections, but I may perhaps indicate the chapters on Leibnitz, with whose philosophical views those of Mr Mabilleau, so far as they are allowed to appear, present many points of agreement, and on "Atomism and the Natural Sciences" as particularly suggestive. The latter, of course, makes no pretence to add to the stock of our physical knowledge, but it seems, as far as a layman can judge in such matters, to be a good and clearly-written summary. The chief source of disappointment in this part of Mr Mabilleau's work, to an English reader at least, is likely to be the inadequate and not over-accurate treatment given to Bacon and Locke. The excessive arrogance with which Bacon flaunted a radically vicious theory of logical method before the world as the one and only organ of discovery has not unnaturally led to the undue neglect of his real merits, but one has a right to expect that the historian of Atomism should give more than half a page to the author of the doctrine of "forms." It is the more unfortunate that Mr Mabilleau is not even accurate in the brief notice which he gives of Bacon's position. It is certainly an extreme exaggeration to say, as he does, p. 428, that Bacon's main object was to refute the alchemists, and, though the expression, a few lines further down, "observation must confine itself to efficient causes," may be justified by the context, it is a very unhappy remark to attribute to Bacon, for whom the opposition of the "form" and the "efficient" is fundamental. Altogether the brevity and superficiality with which Bacon is treated tend to produce the impression that Mr Mabilleau's acquaintance with his works is mainly at second-hand. Curiously enough Locke, with whom the Atomistic conception plays a much more secondary part than with Bacon, is honoured with a much longer notice, apparently more because of the influence of his suggestion that "matter can think" upon late French thought than for his own sake. For Mr Mabilleau Locke is a "Newtonian turned critic," and the main result of his criticism is

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to prove the unthinkability of extended solid atoms, and so to pave the way for Boscovich and the conception of the atom as a mathematical point. This statement of the case seems however hardly accurate. The true definition of Locke would surely be "Baconian growing sceptical," for the "real essence," which for Locke constitutes the inmost nature of a thing, is simply Bacon's "form" with the added characteristic of being unknowable. And the passages which Mr Mabilleau produces to support his view scarcely prove the case. Throughout II. 23, for instance, Locke repeatedly assumes that the "particles" or "little bodies" of which visible things are composed, are, as a matter of fact, both solid and extended, though we cannot tell *how* these two qualities cohere in the same subject, or, in other words, can form no conception of a "substance" which "supports" them. The second passage produced by Mr Mabilleau (II. 4) only becomes relevant if "hardness" and "solidity," which Locke always distinguishes, are treated as identical. Locke would have been the last person to deny the real existence of solid extended corpuscles, which are, after all, from his point of view, none the worse off for being unthinkable.

In the two concluding chapters of his work Mr Mabilleau changes the part of historian for that of critic and of advocate. Step by step, as we have passed from the crude metaphysics of Leucippus to the refined scientific hypotheses of our own day, the atom has been losing more and more of the concrete qualities with which it was at first invested, till, at last, we seem to be dealing with "units" and "forces" which are openly and avowedly mere mathematical symbols, "phenomenal of the unknown." Atomism has finally ceased to be a philosophy and has become a mere systematisation of phenomena. Yet Mr Mabilleau is not prepared definitely to part company with the conceptions which have guided him throughout his historical survey. The key to the question "what is the reality which the scientist's atoms and their motions symbolise?" is, he holds, to be found in the data of self-consciousness. In self-consciousness we have revealed to us the only form of absolute unity and simplicity of which we know; we apprehend the world "from the inner side," whatever that may mean. The final conciliation of science and philosophy lies, for Mr Mabilleau as for some others, in a return to Leibnitz. The atom of the physicist is only the "external" symbol of an "inward and spiritual" unity of which the developed type is to be found in the human mind. And when for the countless atoms, moving eternally under the impulsion of a blind necessity, we substitute a world of interrelated monads, subordinated to one another throughout the whole hierarchy of existence, and combined according to an intelligible plan by the action of the supreme *Monas Monadum*, Atomism seems at last to have fulfilled the task which had been set before it at the end of Mr Mabilleau's sketch of Greek philosophy. It has found its Demiurge and its ἀρχὴ κινήσεως. In the words of Voltaire, it has

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"discovered the soul and God"; and it is this peculiar adaptability to spiritualistic and theistic preconceptions which apparently gives it its chief value in the eyes of our author.

Fully to investigate the merits of this spiritual Atomism would carry us far beyond the limits necessarily imposed upon a review like the present; I will however, in conclusion, indicate as briefly as I can where its inherent weakness lies. Monadism is essentially an illogical attempt to produce reality by the unscientific fusion of two confessed unrealities. With the physical atom the case is of course clear; it is admittedly no more than a symbol which it is convenient to employ for purposes of physical investigation; at least, the man who takes it for anything more exposes himself to metaphysical objections which are apparently unanswerable. And it would not be difficult to shew that the unitary self-consciousness of the Monadist is in the same plight. The absolute unity of the "soul" is, at best, a psychological working hypothesis, and even psychology seems to flourish better without it. The illegitimate nature of the monadist assumption has been once for all exposed by Kant; and if anyone refuses to hear Kant, even so simple a question as the familiar one "Whether Socrates awake and Socrates asleep are the same person?" may reasonably give him pause. But from the off-hand synthesis of two such mere unrealities, how is metaphysical truth to arise? At most Monadism seems to offer us a kind of psycho-physical hypothesis under the pretence of giving us a philosophy. And, even as psycho-physics, the hypothesis seems singularly arbitrary; why might we not suppose, what indeed from many points of view is more plausible, that the psychologist's unit *always* corresponds to a complex physical resultant? Even on the theory of thoroughgoing parallelism between matter and mind, we are hardly committed irrevocably to the *Atom-Seele.*

The fact is, Monadism is rather the result of accommodation to theological preconceptions than the serious outcome of unbiassed philosophical reflection. So arbitrary a synthesis is scarcely likely to find much favour in any quarters but those where religious feelings are allowed to exercise an illegitimate influence on speculation. It is no apology for the inherent incredibility of an hypothesis to say that it affords "the shortest way to the discovery of the soul and God." *Non tali auxilio, nec defensoribus istis.* The philosopher has no right to assume the reality of God and the soul *ab extra*, nor to defend their existence by a metaphysical blunder. Short cuts are, after all, occasionally deceptive.

A. E. TAYLOR.

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Grundriss der Psychologie. Von WILHELM WUNDT. Leipzig: Wilhelm Engelmann, 1896. London: Williams and Norgate. Pp. xvi, 392.

PROFESSOR WUNDT'S *Psychologie* has long been looked for. He has written it at last, in order, in the first place, to provide a text-book for his students; and, in the second, to lay before a wider circle of readers a systematic survey of the most important results of the newer psychology, based on the views which years of study have led him to recognise as correct. It is the result of long and varied investigation and is characterised, as one might expect, by terseness and consistency of treatment, and by a certain finality. The general tendencies of psychological method are briefly discussed; and the dangers, in particular, of a metaphysical bias and of the modern developments of the faculty psychology are clearly brought out; but almost no reference is made to the work of contemporary psychologists, and the points presented as open to question are matters of psychological theory which require further experiment for their demonstration. The book is a brief, clear and consistent exposition of Wundt's psychological system; and more than this could hardly have been achieved within the compass of a single admirably printed volume. Much of the detail has appeared already in the *Grundzüge;* but the adoption of a purely psychological standpoint gives a special interest to the *Grundriss*.

Wundt's system is, to use his own terms, empirical and voluntaristic. Psychology is complementary to the natural sciences, dealing with the same experience from a different point of view, and more strictly empirical than they, because it considers the contents of experience as actually given to the subject, without abstractions and hypotheses. In this way the question of Parallelism is solved. It is needless to draw a hard and fast line between psychical and physical objects, when the difference is entirely a difference of point of view; and, for the same reason, it is possible to bridge over gaps in the continuity of psychological explanation by borrowing for the moment the physiological standpoint, and *vice versa*. But though the two sciences are complementary, they are not co-extensive. Some objects are always given under the form of mediate, others of immediate experience. Processes of fusion and apperception, for instance, can only be analysed psychologically; and the phenomena of light and sound must be explained in terms of physiology and physics. Psychical causality, though never conflicting with physical causality, has laws of its own, and to their investigation the present book is devoted. Except in the chapters dealing with spatial and temporal presentations, there is little psychophysical detail. Reaction-time experiments and the localisation of psychophysical functions are briefly treated. The localisation of apperception is not abandoned, but mentioned as being insufficiently established.

The psychical elements, which are the subject of the first section

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of the book, are divided into pure sensations and simple feelings. They are alike in having the two properties of quality and intensity, and are distinguished by the fact that qualities of sensation form a continuum bounded by maximal differences, while a feeling gradually passes over through a zone of indifference into a feeling of opposite quality. Wundt does not now regard feeling-tone as a determinant of sensation; but prefers to say that every change in either intensity or quality of sensation is accompanied by a change in both intensity and quality of feeling. Feelings are not classified, except in so far as they follow one or more of three main directions: Pain and Pleasure, Excitement and Depression, Tension and Release. Whether the conception of feeling as ranging in a single line between pain and pleasure is adequate to account for all emotional states may reasonably be questioned; but Wundt's theory, that the three directions correspond to the relations of a single feeling to the course of psychical processes, is not very convincing. According to it, every feeling (1) involves a modification of the psychical state at the moment, this modification being in the direction of pain or pleasure; (2) exercises on the following state an influence in the direction of excitation or inhibition; (3) is determined by the preceding state, the effect appearing in the form of tension or release. "These conditions make it probable that no other directions of feeling exist." A scheme is given showing how the combinations of strength or weakness with quickness or slowness of pulse may be said to correspond to these six directions of feeling.

The second section is occupied with the psychical formations (*Gebilde*): presentations, emotions, and processes of will. On the side of sensation, there are intensive, spatial and temporal presentations, on the side of feeling, intensive combinations of feeling, emotions and processes of will. A presentation is intensive if its elements are combined "in an order that may be altered at will"; and extensive (spatial or temporal) if the elements are combined in a fixed order. A spatial or temporal presentation is, in fact, a presentation apprehended as localised or as in a time-order. The definition of a spatial presentation is, accordingly, "a tridimensional formation, the parts of which are in a fixed reversible order, having to the subject a relation (*Orientirung*) that may be changed at will." The characteristic of a temporal presentation, on the other hand, is that any change in the relation between the elements always involves a change in the relation to the subject. Spatial presentations are explained, in the case of the blind, as being fusions between external sensations of touch, with their qualitatively varying local signs, and intensively varying internal sensations of touch (muscular sensations). Visual images, excited by local signs, are an important factor in the tactile spatial presentations of persons who can see. Visual spatial presentations are treated separately, on a similar method. The point that temporal and spatial properties emerge on the level of psychical formations and cannot be attributed to an isolated sensation is strongly emphasized. The distinction

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between nativistic and genetic methods is sharply drawn; and the reader is invited to choose between accepting Wundt's view and assuming in the most limited sensation the presentation of all tridimensional space. No reference is made to the theory of extensity. The ordering of impressions in time is explained as being furthered by temporal signs, which possess temporal properties when combined, though not when isolated. These are either qualitative, feelings of expectation, or intensive, sensations of movement. A temporal presentation is the product of fusion, first, between the two kinds of temporal signs and, secondly, between them and objective sensations brought into a time-order.

Wundt's method of classifying the emotions is threefold. The quality of the feelings involved may be one or more of the three main directions of feeling. The intensity may be psychically strong or weak and will also depend on the sthenic or asthenic character of the physical accompaniments. In form an emotion may be sudden, gradual, or intermittent.

One of the best parts of the book is the chapter on Will, which is regarded as the highest kind of psychical formation and the typical psychical process. It is explained as being an emotion passing over into a sudden change in the content of presentation and feeling which brings the emotion itself to an end. In the primitive form an act of will always consists in movement; and such a process is defined as an emotion ending in a pantomimic movement, the external effects of which put a stop to the emotion. Thus all acts of will depend on the principle of the contrast of feelings. Feelings of pain are followed by motor reactions which bring about feelings of pleasure. The process is traced from the simple action of impulse to the complicated forms of willing; and the gradual mechanisation of voluntary processes is explained on the view that all reflex actions are originally voluntary.

All discussion of consciousness and attention is postponed to the third section, which deals with the interconnection (*Zusammenhang*) of psychical formations. The concept of consciousness, whether individual or social, "expresses that general combination of psychical processes, in which single formations stand out as closer combinations." All processes of attention are "internal actions of will," passive apperception corresponding to the action of impulse, and active apperception to voluntary action. The elements of will are shown even in the simple feeling. Pleasure and pain correspond to the direction of will, excitement and depression to the energy of will, and tension and release to opposed phases of voluntary action.

Willing being the fundamental fact, the feeling of activity which accompanies it is closely connected with "an immediate feeling of the interconnection of all individual psychical experiences." This is Wundt's definition of the "I," which, he remarks, is often erroneously called a presentation. Self-consciousness is a content of feeling and presentation closely fused with the I-feeling. Recollection is explained as resulting from a simple process of recognition,

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when the hindrances to immediate assimilation are so great that the presentational elements opposing the new perception unite into a presentational formation which is directly referred to a previous impression. The properties of apperceptive combinations are discussed with some fulness. They are the simple functions of relating and comparing, and the compound functions of synthesis and analysis. Judgment is regarded as an analytical function. The products of this analysis are conceptual presentations, which are accompanied by a "conceptual feeling," owing to the presence, as memory-images, of dim presentations which might have represented the concept.

The fourth section, on Psychical Developments, deals briefly with the psychology of animals, children and communities. The last and shortest is devoted to the Laws of Psychical Causality. Three psychological laws of relation are given. The first, the law of psychical resultants, "finds its expression in the fact that every psychical formation shows properties which may, after they are given, be deduced from the properties of its elements, but which cannot be regarded as the mere sum of the properties of the elements." The second law embodies the principle that every psychical content receives its significance from the relations in which it stands to other psychical contents. The third is the law of contrasts. In their broader application these laws appear as the law of mental growth, the law of heterogony of ends, and the law of development by contrasts. The second is significant chiefly for ethics, the third for history.

These laws are a brief statement of the principles on which the book is based. Its purpose is to show that every psychological process, however complex, may be traced back to combinations of simple psychical elements. The conception on which Wundt desires most to insist is that of causality; consequently, though the psychological subject is never left out of account, the pyschological individual is not introduced at all. To the beginner this method may present some difficulty; but the symmetry of arrangement which characterises the book will help him to grasp it as a whole. The double aspect of psychology, which has its simplest form in the distinction between sensation-elements and feeling-elements, is kept in view throughout; and the two sides, while treated as parallel lines of development, are brought together, at the different stages of psychological advance, as different aspects of the same thing which can only be separated by abstraction. Such fundamental truths as, for instance, that all psychological facts are necessarily processes, are continually kept before the reader; and all the terms employed are precisely defined. References to other works have been given so fully in the *Grundzüge* that they are entirely omitted here. The alphabetical index is accurate, so far as it goes; but might with advantage be made more complete in a second edition.

MISS E. F. STEVENSON.

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VII.—NEW BOOKS.

Anarchy or Government? An Inquiry in Fundamental Politics. By William Mackintire Salter, Author of "Ethical Religion" and "First Steps in Philosophy." New York: Thomas Y. Crowell & Company. Pp. 176.

Mr Salter is one of the small band of high-minded men who have dedicated themselves to the service of the "Ethical Culture Movement" in the United States. No better expression of the spirit animating the promoters of that Movement could be pointed to than the collection of lectures, published some years ago under the title of "Ethical Religion," and which found a translator in Germany in the late Professor Gizycki. This book was duly noticed at the time in *Mind*, but a small volume by the same author, which appeared in 1892, of a more theoretical character (*First Steps in Philosophy, physical and ethical*, London: Swan Sonnenschein & Co.) accidentally escaped acknowledgment. It shows, however, the author to be, not merely a man of singular moral earnestness, but also an acute and close thinker. Part I. of *First Steps in Philosophy* consists of an examination of the idea of "Matter," Part II. deals with the concept of "Duty." As the title of the book suggests, there is no attempt at exhaustive treatment; none the less, the clear statement of principle and fair criticism in each Part, of other points of view give it no little propaedeutic value. The hardened realist, popular or scientific, will certainly be the better for reading the first 70 pages; while the subjectively-biassed intellect may be taught caution in presenting his idealism. In practical philosophy Mr Salter espouses the *doctrine of the realization of each being's nature* as the ethical end. Two short chapters are devoted to Intuitionism and Utilitarianism as rival standpoints. A certain truth is allowed to each of these, but not as ultimate and self-sufficing. While sympathising with the author's drift in this second Part, we cannot but think that the discussion, though always suggestive, is less convincing and satisfactory than that having regard to the problem of Matter. Perhaps this is due to the more complicated nature of the practical problem, requiring ampler space than the limits of the volume allow.

The author's recent volume, of which the title is given above, carries us into the field of political Ethics. It owes its origin to courses of lectures, delivered first at Plymouth, U. S., then in more expanded form before his own Society for Ethical Culture at Philadelphia. All but the last chapter is fundamental inquiry, being a balancing in various regards of the advantage and disadvantage of Government and No-government. The last chapter has reference to the special case of the Pullman-Chicago Strike of 1894. In the first three chapters the notions of Government and Anarchy (absence of government) are generally examined, in the three following the special applications in Defensive War, in protecting Life and Property, in

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promoting the Higher Ends of Life, and in the industrial realm are considered.

By Government the author understands rule with the power of enforcing it. Whatever be its origin, whenever rule is set up with the power or right of compelling obedience to its commands, we have obedience in the proper sense. Anarchy, on the other hand, is always voluntaryism. It is not necessarily social atomism. Individuals may constitute themselves members of an ethical corporation, and the corporation so formed might issue decrees; but if the right were retained of acting in each case according to one's own judgment and no further, though there would be a society, and perhaps on the whole an orderly society, there would be no government. So that Anarchy is synonymous with Individual Liberty; but might still be moral associationism. This being so, in an enlightened condition of the world the question between Government and Anarchy is simply one of expediency. As there are few established governments that do not leave a good deal to private enterprise, so it is quite conceivable that voluntary cooperation might accomplish more than the most compact compulsory union, and might even be the visible sign of more far-reaching internal coherence. The value of Mr Salter's treatment is in dispelling certain assumptions as to social "rights" and "necessities," which find their way into the most reputable treatises. There is much effective criticism of Mr Spencer, whose inconsistencies in respect of the limits of government, and dubious ethical economics, are well displayed. One feels in reading the book that the author is not merely a closet-student of political philosophy, but in close contact with the practical difficulties of the hour, especially as manifested in his own country. A thoughtful chapter, entitled "Anarchy or Government in the Industrial Realm," concludes with the words:—"I hold in perfect consistency to the two ideals,—government now and an end of government in time to come. The social consciousness, in proportion as it is real, demands government under existing circumstances; but finally the social consciousness may be so perfect that government will be allowed to drop away like an out-grown shell. To work for the enlarging and deepening and spreading of the social consciousness in the minds of our American people, to increase the sense of our belonging to one another, to make us feel more and more that an injury to one is an injury to all, is, in my judgment, one of the great ethical tasks of to-day."

Proceedings of the Aristotelian Society. Vol. 3, No. 2. London: Williams & Norgate, 1896. Pp. 135.

Seven of the papers read before the Aristotelian Society in 1895—96 are here reproduced, together with other seven constituting two symposia. The presidential address forms the first paper, and deals with "Time and the Absolute," as illustrating the views contained in the address of last year. The second paper, by Mr Benecke, consists of a careful discussion of the two senses in which the term *à priori* has by different writers been applied to knowledge. Mr Benecke himself is inclined to introduce a third sense according to which the *à priority* of knowledge is determined by the date of its acquisition in the individual mind. It thus becomes a merely relative term, and knowledge which is *à posteriori* to-day as compared with the knowledge of yesterday, will be *à priori* to-morrow with reference to the information to be received the day after. In order, however, to avoid the confusion of introducing a third meaning he uses the terms prioric and posterioric.

Mr Russell enters upon a similar discussion in his paper on "The *à*

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priori in Geometry." He reduces the axioms which are strictly *à priori* to three which are involved in any form of externality, but rejects as empirical those which refer especially to Euclidean Space.

Mrs Bryant contributes a paper on the emotions, taking Prof. James's theory as a text, and arguing against him in favour of the more purely mental element in the emotions, as opposed to their manifestation in mere bodily sensations.

More historical in their interest are the papers by Mr Webb on "Anselm's Argument for the Existence of God," and by Mr C. Llewellyn Davies on "Kant's Teleology"; though both writers conclude with a brief application of their results to our present day needs. This latter point of view, on the other hand, is predominant in Mr Blunt's paper on "Philosophy and Naturalism," in which the shortcomings of Naturalism as resulting logically in "the irrationality of the world with consequent pessimism" are censured, and the claims of Philosophy maintained.

The symposia are of special interest as bringing together the very different points of view from which a subject may be discussed, and as revealing the very different colouring which it assumes in its passage through different minds, even when they arrive at a consensus of opinions. In the symposium on "In what sense, if any, is it true that Psychical States are extended?" Mr Stout, Mrs Bryant, and Mr Muirhead take part, but only Mrs Bryant is able to find the required sense, and she is obliged to limit it carefully. The second symposium on "Are Character and Circumstance Co-ordinate Factors in Human Life, or is Either Subordinate to the Other?" is introduced by the President, and his conclusion that circumstance is subordinate is accepted with various provisos and on various grounds by Miss Jones, Mr Gildea and Mr Shand.

H. BOSANQUET.

Psychic Development of Young Animals. From the Transactions of the Royal Society of Canada. By WESLEY MILLS, M.A., M.D., F.R.S.C., Professor of Physiology in McGill University, Montreal. Ottawa: John Durie and Son. London: Bernard Quaritch, 1895.

The work of Mr Wesley Mills is of a kind which deserves a hearty welcome from all who are interested in psychology. It consists so far of six papers, dealing respectively with the Dog, the Cat, the Mongrel Dog, the Dog and Cat compared, the Rabbit and the Cavy, the Pigeon and the Domestic Fowl. The method adopted is that of keeping a record showing the gradual progress of the animals from day to day. Great care is taken to test the development of the senses. The author in each case appends to the diary remarks and a summary of conclusions. The remarks are sometimes too condensed to be readily intelligible. One of the chief points which his diaries seem to us to illustrate is the gradual transition from isolated sensory reactions to combinations of movement controlled by perpetual synthesis of sensory data. It would be interesting to have an exact correlation between the various stages of mental development and the corresponding phases of brain growth. We gather from various hints that Dr Mills has not neglected this side of the subject, and we presume that his results will appear in subsequent papers.

Du Contrat Social. Par J.-J. ROUSSEAU. Édition comprenant avec le texte définitif, les versions primitives de l'ouvrage collationnées sur les manuscrits autographes de Genève et de Neuchâtel, avec une introduction et des notes par EDMOND DREYFUS-BRISAC, rédacteur en chef de la *Revue internationale de l'Enseignement.* Paris: Félix Alcan, 1896. Pp. xxxvi, 426.

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No one can doubt that the abstract form of social speculation characteristic of the middle of last century still has enormous authority in democratic countries, in spite of all the destructive criticism which has intervened, and destroyed its vogue with scholars. It is still maxims like "one man, one vote," with their blameless quasi-axiomatic plausibility, which sweep great populations, and serve as the flags under which the blundering battles of actual politics are usually fought. There is a singular tenacity of life in these labour-saving eighteenth century principles; nor is it only in untilled soil that they flourish. Despite the criticisms of Austin and Maine, and the masterly work of the historical school, they are constantly cropping up in all the social sciences, usurping the place which should be taken by the study of history and fact. If then, we still have to reckon with this mode of thought, it is worth careful study: and if it deserves study, it can hardly be better studied than in Rousseau. Never has it found a more splendid or persuasive literary expression than in his *Contrat Social*.

But Rousseau is not read. "Rousseau est célèbre," says M. Dreyfus-Brisac, "mais il n'est pas connu." M. Dreyfus-Brisac has removed all excuse for such ignorance so far as the *Contrat Social* is concerned by the admirable edition he now gives us. It is a work of truly historical character carried out upon lines which will commend themselves to scholars, and especially to the readers of this Journal. Instead of wearying the reader with subjective appreciations, the editor has endeavoured first to define Rousseau's meaning by reference to the "perpetual commentary" which is afforded by passages in his other writings, and secondly to illustrate his positions by comparison with similar passages in other great political writers, and notably in Hobbes, Spinoza, and Montesquieu.

Besides the text of the *Contrat Social*, carefully collated from the different editions, and from the MS. of Geneva, the volume contains the text of this MS., passages bearing on the composition of the work, and large extracts from other works of Rousseau: together with reproductions from the MS., illustrating Rousseau's writing and other important particulars bearing on the authenticity of the text.

The whole is prefaced by a short but excellent introduction. The editor here gives a concise account of the circumstances and form in which the *Contrat Social* first appeared, and a brief abstract of its contents. He also takes occasion to explain the principles by which he has been guided in his editorial work, and the canons of interpretation which seem to be proper for treatises produced under eighteenth century conditions: principles so judicious that, did space permit, one would be tempted to quote them. The introduction ends with a modest commendation to the reader. M. Dreyfus-Brisac tells us he has not sought to adjudge praise or blame, sincere admirer as he is of Rousseau. He has only had one object in view. "J'ai voulu faire mieux connaître Rousseau." The book is admirably calculated to realise its author's aim.

Études historiques sur l'Esthétique de Saint Thomas d'Aquin. Par MAURICE DE WULF, Docteur en Droit, Docteur en Philosophie et Lettres, Professeur à l'université de Louvain. Louvain: Institut Supérieur de Philosophie, 1896.

From Xenophon, Plotinus, and St Augustine, and yet more directly from the writings rightly or wrongly identified with the name of Dionysius the Areopagite, St Thomas draws the two fundamental principles of his theory of objective beauty, viz. proportion or symmetry, and brightness of

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colour. But beauty besides its objective has also a subjective aspect, inasmuch as it connotes a series of psychical phenomena. Beauty makes an *impression*; we *perceive* beauty; and from this perception comes *enjoyment*. Hence aesthetic must have a psychological as well as a metaphysical aspect. Though this may have been in some instances taken for granted by the early philosophers, Professor de Wulf finds it definitely formulated for the first time in the well-known dictum from the *Summa Theologica*: "Pulchrum respicit vim cognoscitivam; pulchra enim dicuntur quae visa placent; unde pulchrum in debita proportione consistit." Here beauty is clearly seen to be a relative idea, implying not merely the perfection of an object, but its apprehension and cognition by the intellect. It would take too long to note even cursorily the intimate relation existing between the "claritas pulchri" and the formal cause of entities as understood in Scholastic Philosophy. Suffice it to say that Professor de Wulf deduces therefrom the modern theories of the ideal in art as an outcome of the aesthetic of St Thomas Aquinas. In the second and concluding chapters of his treatise M. de Wulf passes under review the theories of the philosophers of antiquity concerning the good and the beautiful. From Socrates, who denoted their indissoluble union in the word *καλοκαγαθία*, to the latest patristic writers, the good and the beautiful seem to have been considered in all respects absolutely identical. But, according to St Thomas, while the beautiful and the good are identical ontologically, they are not so psychologically. In a few concluding words Professor de Wulf contrasts ancient, mediaeval, and modern aesthetic, and assigns preëminence to the mediaeval aesthetic.

Éléments de Psychologie Humaine. Par J.-J. VAN BIERVLIET, Docteur en Philosophie et en Sciences, Professeur Ordinaire. Paris: Félix Alcan. London: Williams and Norgate, 1895. Pp. 317.

165 pages of this book are devoted almost exclusively to an account of general physiology and of the physiology of the senses. Then follow expositions (1) of the psychology, and (2) of the "psycho-physiology" of conscious phenomena. In spite of his marked physiological bias, the author maintains that certain conscious functions are without material correlates. Though mental images exist only as concomitants of neural states, judgment, comparison and reasoning are the work of an independent Ego. Similarly, it is argued that the will is free and "immaterial." For the rest, the psychology of the author is crudely associationist. None the less, the book deserves some praise. It is written with conspicuous lucidity and elegance, and may help the beginner in acquiring knowledge of the physiological prolegomena of psychology.

Les Principes du Positivisme contemporain. Exposé et Critique. Par J. HALLEUX, Docteur en Droit, Docteur en Philosophie. Paris: Félix Alcan, 1895. Pp. 347.

Positivism is justified as a reaction against the exaggerated spiritualism which began with the philosophy of Descartes. It opposes to an Ego entirely spiritualised, an Ego entirely materialised; to intuitive knowledge of existence *per se*, a purely phenomenal knowledge from which is hidden everything in the nature of cause or substance. The main point urged by the author in criticism of positivism, is that apart from these metaphysical principles of cause and substance, positive science would itself be impossible.

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La Morale des Philosophes Chinois. Extraits des livres classiques de la Chine et de l'Annam. Par J.-L. DE LANESSAN, Professeur agrégé d'Histoire naturelle à la Faculté de médecine de Paris, Ancien gouverneur général de l'Indo-Chine. Paris: Félix Alcan, 1896. Pp. 124.

An interesting collection of extracts from the classical Chinese moralists, accompanied by a running comment. The topics are methodically arranged under the heads: Foundations of Morality, Individual Morality, Family and Social Morality, and Political Morality. This book may be recommended to students of national character, and it is likely to prove a happy hunting-ground for collectors of ethical extracts.

Hobbes Leben und Lehre. Von FERDINAND TÖNNIES. Stuttgart: Friedrich Fromann. London: Williams and Norgate. Pp. xiii, 232.

English readers have had, since 1886, an excellent monograph on Hobbes by the late George Croom Robertson. In the present work Tönnies does for Germans what Robertson has already done for Englishmen. Dr Tönnies has long been known as a student and editor of Hobbes. He has critically examined and corrected the text of Sir W. Molesworth's edition; he has edited Hobbes's *Elements of Law*, and published, for the first time from the original MS., the "Behemoth, and the Long Parliament."

We have failed to find in Tönnies' work any important statements of fact not contained in that of Robertson. The differences between them lie chiefly in their respective estimates of Hobbes. Robertson is the more severe, Tönnies the more lenient critic. The attitude of Hobbes, like that of most of his great contemporaries and successors, including Locke, towards the ancient philosophy was one of comparative ignorance. The Aristotle, *e.g.*, of Hobbes was not the writer with whom the world has been for the last half century renewing its acquaintance, but the false presentment of him given by mediæval sages. In the beginning of the *Leviathan* Hobbes scoffs at the doctrine of 'visible, audible and intelligible' species "grounded on certain texts of Aristotle"—a doctrine which, of course, the author of the *De Anima* never held; but in the same page adopts the really Aristotelean, but even then exploded, view of the heart as the presiding member of the sensory system. This deficiency on Hobbes's part is carefully pointed out by Robertson, but scarcely noticed by Tönnies.

Tönnies, too, is inclined to credit Hobbes with an undue share of influence on, or anticipation of, the course of subsequent philosophy. Spinoza's political theories may have been affected by the *Leviathan*; but it is extravagant to suppose, as Tönnies (pp. 159—60) almost does, that the ingenious device by which the Jew of Amsterdam tried to conciliate the spiritual and material aspects of truth had really occurred to the philosopher of Malmesbury. The latter, indeed, was not distinctly aware of the need of any such conciliation; not seeing clearly the difficulties of his theory that motion, and motion alone, can explain perception, while the facts of physics, on the other hand, are all given in and by perception. From this vicious circle, in which he often moves with manifest uneasiness, he never made a decisive attempt to free himself. In his judgment of Hobbes's relationship to mathematics and physics Robertson is more rigorous, and, we venture to say, more just than Tönnies. It was indeed strange that Hobbes, whose habit of mind was remarkably positive, should have slighted the methods of scientific experiment, while Boyle and others were, in the true Baconian spirit, and with much more profit than Bacon,

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"interrogating nature." In mathematics Hobbes was ὀψιμαθής. This was pardonable. But that a philosopher should be blind to his own deficiencies, and obstinate in his claims to authority, in this branch, was less to be excused. The weakest side of his character as a man and as a philosopher appeared in his foolish controversies with Boyle and Wallis. The crushing defeat which the latter inflicted must have destroyed his character as a mathematician; and he was not likely to fare much better at the hands of the former. Under these circumstances we are at a loss to understand Tönnies' surprise (p. 60) that Hobbes was not chosen a Fellow of the newly-founded Royal Society, or his suggestion that this was owing to the personal ill-will of Wallis and of the Church party. For unreasonableness, nothing in Tönnies' monograph equals this suggestion. How could the Royal Society, with its well-known character and aims, have admitted to Fellowship one whom its leading spirits regarded—and with more than apparent truth—as a sciolist in mathematics and an enemy to the true methods of advance in Physics? Tönnies (p. 55 n.) thinks that Robertson exaggerates the historical importance of Hobbes's controversy with Wallis; to us it appears to largely explain why Hobbes so little influenced the best minds of his day in England. Descartes, like Hobbes, had promulgated a great deductive system; but he won confidence for his 'method' by the publication, in the following year, of the *Géométrie* in which the splendid results of that method were exhibited. The discursive thinking—the so-called philosophy proper—of Leibniz and of Kant had similar and equally sound credentials. But the attempts of Hobbes to shine in science were not only fatuous in themselves, but fatal to public confidence in his philosophy.

Tönnies seems peculiarly attracted by one whom (he says), "Englishmen still designate as the Father of Unbelief in their Land," whom moreover A. Comte pronounces "the father of revolutionary philosophy." While it is true that English thinkers, as a rule, far from identifying atheism with enlightenment, see no positive connexion between them, it is equally true that Hobbes's failure to impress his fellowcountrymen was less owing to their natural prejudice, than to his having inspired men of science in England with an utter distrust of his pretentious dogmatism. In psychology and politics—the fields in which his best work was done—the writings of Locke soon engaged the attention of Europe, and completed his obscuration.

JOHN I. BEARE.

Die Grenzen der naturwissenschaftlichen Begriffsbildung. Eine logische Einleitung in die historischen Wissenschaften. Von DR HEINRICH RICKERT, ao. Professor an der Universität Freiburg i. B. Erste Hälfte. London: Williams and Norgate, 1896. Pp. 304.

The author gives the following summary in a Preliminary Note: "I attempt to fix the limits of natural science, for the purpose of bringing into light the essence of the historical sciences. The present instalment of the work endeavours to show what History is *not*. The second instalment, which is likely to appear before the close of the present year, will deal positively and directly with the logic of History." The general point of view of the author is that it is the aim of natural science to discover the system of abstract laws, and that of history to describe the concrete facts as we find them in their actual space and time relations. The book is well written, and forms a valuable contribution to applied logic. Fuller notice will follow when the Second Part is received.

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VIII.—PHILOSOPHICAL PERIODICALS.

THE AMERICAN JOURNAL OF SOCIOLOGY. Vol. I. Bi-monthly: July 1895—May 1896. Chicago: The Chicago University Press, 1896. The University of Chicago is to be congratulated on the production of the first volume of the *American Journal of Sociology*. Hitherto no American magazine has exclusively devoted itself to the scientific treatment of the subjects properly belonging to sociology or the science of human society as a whole. The University of Chicago has undertaken the task of supplying this want and has assumed the financial responsibility for the undertaking. It was considered that a Journal of Sociology was needed as a means of co-relating investigation in the specific social sciences. The new Journal will not be the organ of any school of sociological opinion. It will serve as a clearing house for the best sociological thought of all schools. The editorial responsibility will rest with the department of Sociology of the University of Chicago. Advising editors and contributors will be drawn from the ranks of the most eminent social thinkers in Europe and the United States. The editors from time to time will express their own views, but the pages of the Journal will be open to the exposition of contradictory views whenever the latter have sufficient justification to deserve the attention of competent thinkers. "The cardinal principle of editorial policy," says the prospectus, "will be insistence that the relation of details to the whole plexus of societary activities past, present and future shall be the fundamental consideration. The sociological point of view will thus be maintained in distinction from the standpoint of the specialist."

In an introductory article the Editor, Mr Albion Small, further enlarges on the scope of the Journal. It will be devoted, he says, to the organisation of knowledge pertaining to the relations of men in society into a sociology that shall represent the best American scholarship. But the Journal will not be a merely technical publication. It will attempt to translate sociological ideas into the language of ordinary life. As Mr Small very truly observes, "if sociology is to be of any practical influence it must be able to put its wisdom about things that interest ordinary men in a form which men of affairs will see to be true to life." In treating of specific proposals for social amelioration the object of the Journal will be to explain these proposals not merely in their relation to immediate ends but in their relation to the most remote results which may be expected to flow from them. These proposals will be estimated not by their value as palliatives but with reference to the nature of the modifications which they are calculated to produce on the type and tendencies of society. The present volume contains discussions on sociological method, on the relations between sociology and kindred sciences, on sociological tendencies, and on social conditions and processes of a significant character. We cannot notice in detail the various articles of which the first volume is composed.

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But we may mention that Mr Lester F. Ward's series of papers on the place of Sociology among the sciences are particularly well done. Mr Ward expresses himself in vigorous and pellucid English, he is at home in his subject, and whether the reader agrees with him or not he always feels that he is being addressed by a man of penetrating grasp. Mr Henderson's article on the Place and Function of Voluntary Associations deserves notice. The reviewing is on the whole carefully done. We commend the Journal to readers desirous of keeping in touch with social ideas and movements in the United States.

W. D. MORRISON.

REVUE PHILOSOPHIQUE. Vingt et unième année, No. 4. (Avril, 1896.) **G. Fonsegrive.** 'Généralisation et induction.' (1re article.) **H. Bergson.** 'Mémoire et reconnaissance.' (*Fin.*) **Ch. Féré.** 'Civilisation et Névropathie.' Revue Générale &c. No. 5. (Mai, 1896.) **A. Fouillée.** 'Nécessité d'une interprétation psychologique et sociologique du monde.' **F. le Dantec.** 'L'évolution chimique de l'espèce.' **G. Fonsegrive.** 'Généralisation et induction.' (*Fin.*) Observations et Documents &c. No. 6. (Juin, 1896.) **G. Dumas.** 'Recherches expérimentales sur la joie et la tristesse.—I. La joie.' **R. de la Grasserie.** 'De l'involution et de l'ordre respectif des idées révélés par le langage.' **Ch. Féré.** 'La main, la prehension et le toucher.' Revue Critique &c. No. 7. (Juillet, 1896.) **L. Dauriac.** 'Études sur la psychologie du Musicien.—VI. Le plaisir et l'émotion musicale.' **G. Dumas.** 'Recherches expérimentales sur la joie et la tristesse.—II. La tristesse.' **B. Münz.** 'La Logique de l'enfant.' Revue Générale &c.

REVUE DE MÉTAPHYSIQUE ET DE MORALE. 4e année, No. 3. Mai, 1896. **H. Bergson.** 'Perception et matière.' [Extracts from a work soon to appear in the Alcan Series, the *momenta* of which are contained in the four following propositions: (1) All movement considered as a passage from one state of rest to another is absolutely indivisible. (2) There are real movements. (3) Every division of matter in independent determinate bodies is an artificial division. (4) Real movement is rather the transference of a state than of a thing. In the development of these propositions we find given an interesting disquisition on the problems of matter, motion and perception.] **G. Milhaud.** 'La science rationelle.' [Absolute truth is nowhere to be found in science. The disappearance of this contrary notion is a pure benefit to science itself.] **A. Beaunier.** 'Sur un jugement esthétique de Schopenhauer.' **A. Spir.** 'Essai sur les fondements de la religion et de la morale.' [Examines the ontological proof of the existence of God. Kant had easy work in overthrowing the scholastic form of this proof. But he only vanquished a shadow—not the real proof in its sound form. 'The fundamental fact is, that we have the idea of an absolute, or perfect, Being; or to speak more exactly, the idea of an existence or nature which is absolute or perfect; and that this idea cannot have been drawn from experience. This fact acquires its full significance only when we shew that an idea of an absolute and perfect nature of things is the fundamental law of thought—a law without which it would be impossible to form a moral judgment. The initial fact was well brought out by Descartes, viz. that we find ourselves imperfect, &c.' In its second part this Essay treats of the relation between the Absolute and the Conditioned in the physical world.] Études Critique, &c.

REVUE NÉO-SCOLASTIQUE. The first article of the May number, *Le Beau et Le Bien*, forms the second part of Professor de Wulf's *Études historiques sur l'esthétique de Saint Thomas d'Aquin*, which we notice

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elsewhere. In *Premiers principes de la métagéométrie*, P. Mansion discusses the geometries of Lobatchefsky and Riemann which have been formulated during the present century as results of a critical examination of the first principles of the science of space. These two younger presentments of geometry form with the geometry of Euclid, Metageometry or General Geometry, and their existence is important from a philosophical point of view as implying the destruction of one of the foundations of Kant's *Kritik der reinen Vernunft*, inasmuch as it proves the uselessness of what we may term his 'geometric imperative.' But the philosophical consequences are promised for a future number. An article by G. Le Grand on *W. Roscher et l'Historisme économique* opens with a glance at Roscher's personal history and his sphere of personal influence, enumerates the advantages and the disadvantages of the inductive and deductive methods respectively as applied to political economy, presents in some detail Roscher's inductive theory of historical evolution, and makes clear his hearty acceptance of the principles which form the foundations of society. *La Psychologie de Descartes*, a particularly able paper by D. Mercier, brings before us the French philosopher, on the eve of his tercentenary, as before all things a geometrician in philosophy, in physical science, but above all in psychology. The writer well shews that the famous formula, 'I doubt, I think, therefore I am,' lies at the root of Descartes' psychology. From this it follows that the object of psychology is not man composed of body and soul with his triple life, vegetative, sensitive, and intellectual, but mind and its thought between which there is no *real* distinction, but only a *distinctio rationis*. How this purely spiritualist view of psychology fares when brought into relation with corporal activity, D. Mercier promises to tell us in a future number.

PHILOSOPHISCHE STUDIEN. Bd. XII., Heft 2. **E. Meumann.** 'Beiträge zur Psychologie des Zeitbewusstseins.' (*Dritte Abhandlung.*) [The writer departs from the proposed sequence of his publications upon the time consciousness to discuss time-illusions occurring in the estimation and comparison of differently filled times. An illusory judgment of duration is one which is not due to differences in the duration of the sensations limiting the estimated intervals. The experiments deal with the comparison of stimulus-filled and empty (stimulus-limited) times. The author's two-page summary of results cannot, unfortunately, be further summarised.] **F. Kiesow.** 'Beiträge zur physiologischen Psychologie des Geschmackssinnes.' (*Fortsetzung.*) [Phenomena of compensation and mixture. After-tastes.] **K. Marbe.** 'Theorie des Talbot'schen Gesetzes.' [Duration of stimuli; difference of stimulus durations; difference of stimulus intensities; average intensity of the two stimuli; movement of contours.] **J. Cohn.** 'Die Gefühlswirkung der Begriffe: ein Beitrag zur psychologischen Erfassung der Geschichte der Philosophie.' [A suggestive paper, emphasising the non-logical, affective factors in the development of the concepts employed by philosophy. The writer promises an extended historical study of the problem of the infinite.]

VIERTELJAHRSSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE. XX. Jahrgang, Heft 2. **M. Guggenheim.** 'Zum Leben Spinozas und den Schicksalen des tractatus theologico-politicus.' **F. Carstanjen.** 'Entwicklungsfaktoren der niederländischen Frührenaissance.' (II. *Schluss.*) **R. Willy.** 'Der Empiriokritizismus als einzig wissenschaftlicher Standpunkt.' (II.) Anzeigen &c.

PHILOSOPHISCHES JAHRBUCH. Bd. IX., Heft 1. **V. Cathrein, S. J.** 'Worin besteht das Wesen des sittlich Guten und des sittlich Bösen?'

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[The essence of moral good or evil consists in the tendency of any action to further or to thwart the ultimate end of man's being.] **L. Schütz.** 'Der Hypnotismus.' (*Fortsetzung.*) [The writer continues to expound at length the phenomena of hypnotism, as to their effects on the organic forces, the motor powers and the sensitive faculties.] **C. Gutberlet.** 'Ist die Seele Thätigkeit oder Substanz?' (*Schluss.*) [The conclusion reached, against Wundt and others, is that to deny the substantiality of the soul, whilst admitting its activity, is self-contradictory.] **B. Paqué.** 'Zur Lehre vom Gefühl.' (*Fortsetzung.*) [The multitude of mental phenomena is unified by the pervading character of self-consciousness, and divided into sensitive, intellectual, and moral workings of the mind.]

Bd. IX., Heft 3. **Prof. v. Schmid.** 'Das Causalitäts-problem.' [Every effect implies a cause; but does every phenomenon that begins in time imply a cause too? The *Realized* means the same as *Effect*; whatever has a beginning is realised, and implies that which realizes it: these two propositions are thus identical.] **Dr Adlhoch.** 'Der Gottesbeweis des hl. Anselm.' (*Fortsetzung.*) [The author continues to prove that St Anselm's demonstration of God's existence is neither *a priori* nor *a simultaneo*, nor ontological (implying an immediate vision of God); but psychological, and, as such, valid.] **Dr Bernh. Paqué.** 'Zur Lehre vom Gefühl.' [After noticing the conditions which influence sensation, and briefly touching upon moral and religious emotions, the writer concludes that a 'Philosophy of Feeling' must arise, born of that of the Will, as the latter was born of the Philosophy of Consciousness.] **Mathias Kohlhofer.** 'Zur Controverse über bewusste und unbewusste psychische Acte.' [In this, the first of two papers, the writer lays down certain general principles, carefully distinguishing, for instance, sensitive from intellectual consciousness. 'Sensation and *Ego* are like water and wet sponge; both are felt together; but press the sponge, and you will feel both separately.']

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. Band II., Heft 3. **J. Bergmann.** 'Das Begriff des Daseins u. das Ich-Bewusstsein' (II). **P. Natorp.** 'Grundlinien einer Theorie der Willensbildung' (III). **B. Erdmann.** 'Die psychologischen Grundlagen der Beziehungen zwischen Sprechen und Denken' (I). JAHRESBERICHT über die Erscheinungen auf dem Gebiete der systematischen Philosophie: (IV). **F. Tönnies.** 'Jahresbericht über Erscheinungen der Sociologie aus den Jahren 1893–1894, nebst Vorbericht.'

VAPROSI PHILOSOPHII I PSYCHOLOGII. March—April, 1896. **W. Gervié.** 'Herder's Philosophy of History.' [This first paper points out that the philosophy of history had its rise in the eighteenth century; Herder was the first to inquire into the progress and destiny of mankind.] **L. E. Obolenski.** 'The autonomy of man and its progressive phases.' [Having, in a foregoing paper, defined autonomy as the power of self-transformation, the writer follows it from inorganic substances to man, and affirms that we constantly tend towards a better state.] **S. N. Trubetski.** 'The Basis of Idealism.' [Hegel's conception of Being is attacked in this paper. The idea of Being has no scientific meaning, beyond the limits of thought and feeling.] **L. Lopatin.** 'The phenomena of conscious life.' [The unity of consciousness, the consciousness of the reality of time and that of our own activity, are not the results of experience but its condition and its very soul.] **Nicholas Grote.** 'Souvenirs of M. M. Strachoff.' [He was an idealist and a decided Hegelian, yet independent in his views.] **M. M. Nlepluyeff.** 'The Christian harmonies of the soul.' [The confession of a man penetrated with the idea of Christianity according to the Bible.]

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A. M. Bernstein. 'The world of sounds, as an object of sensation.' [No sound can become an object of sensation, unless it simultaneously excites the hearing organ and the nerves of its muscular apparatus.]

RIVISTA ITALIANA DI FILOSOFIA. March—April. **A. Andreo.** 'L'origine della Vita.' [Life is not eternal and the date of its beginning can be determined from geological and biological data. The question of how life began is next discussed—(*a*) a creation and (*b*) spontaneous generation are declared illegitimate hypotheses, and life is finally deduced according to evolutionary methods by six inorganic and four organic stages.] **G. Marchesini.** 'Idealismo, Materialismo, e Positivismo.' [Idealism and Materialism are both characterized as sterile, while Positivism is progressive, a severe counsellor of prudence and hope. In this article Idealism is understood as Empirical Idealism, chiefly in connection with the work of Mill and M. Brisac, and there is little mention of the "Constructive Idealism" between Kant and Hegel.] **N. R. D'Alfonso.** 'La Follia di Ofelia.' [An endeavour to interpret the mental states of Hamlet and Ophelia psychologically, in which the primary datum is a morbid over-excited condition of mind in Hamlet which he cannot communicate to others. Though Ophelia endeavours to enter into Hamlet's inner life she can only reach the fringe of it, which appears to her to be a general state of gloom. While she is in this condition she hears of her father's death and this leads to madness. A comparison and contrast of Macbeth and Lady Macbeth with Hamlet and Ophelia is of interest.] **B. Labanca.** 'Il Congresso delle Religioni a Chicago nel 1893.' **A. Val-Darnini.** 'Due Riforme necessarie nella Istruzione secondaria.' Bibliografia Bollettino &c.

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IX.—NOTES AND NEWS.

THINKING, FEELING, DOING.

THE April number of *Mind* contains, contrary to its custom, a singularly unjust review, namely, of my book, *Thinking, Feeling, Doing.*

It is not a criticism, for not one word is said that would give the reader of *Mind* any idea of the circumstances under which the book appears, of the adaptation of the book to those circumstances and of the results that follow from making a success of the attempt.

The request came from a most powerful institute for public education, the Chautauqua Literary and Scientific Circle, for a popular book on the new psychology. It was an opportunity for the new psychology such as has never occurred before and might never occur again, to form the public attitude (and in America everything depends ultimately on this attitude). I accepted the responsibility of preparing a book for the widest circulation that can be obtained for a scientific work. It would seem probable that, living nearer the centres of civilization and not in the wilds of California, and having made a study of public indifference and public taste, I would know how to write the book better than Prof. Angell; yet he complains of "209 illustrations to 294 pages of text," "excavations beneath the popular level," "of the nursery-book type," etc. He thinks that the public "needs a missionary," that the greatest originality of the book lies in its "jocularity," with other more or less facetious and dignified criticisms.

The book was not written for Prof. Angell's benefit, but was intended to be reading of the liveliest and most striking kind. The public has found it so. It is not my place to state the particular features that brought about this result;—that should have been done by a fair-minded reviewer. It is somewhat unfortunate for Prof. Angell's prophetic powers that the result had already happened before his review appeared.

Prof. Angell, utterly disregarding the nature of the book, proceeds to criticise *Thinking, Feeling, Doing*, from the standpoint of a learned treatise on psychology. The rest follows as a matter of course. I am charged with "borrowing" illustrations from other works. Over two thirds of the illustrations were made expressly for my book or were "borrowed" from my own *Studies*; of the rest most were commonplaces like the optical illusions that are "borrowed" by every book on psychology; the few remaining ones, like Kirschmann's perimeter-chart or König's fork, are, or ought to be, familiar to every psychologist. For these the competent psychologist needs no reference, and the public wants none.

He also complains that I do not give references to the psychological sources from which I have drawn material and ignores the fact that "references" are utterly out of place in a popular work. He would have

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complained in any case, for, if I had given the sources from which the material was drawn, a large part would have been to my own *Studies*. This would have displeased him because he makes a special objection to the fact that I appear as one of the characters in five of the scenes photographed in the laboratory. In the first place, what difference does this make to the public, to whom I am personally unknown? In getting up the scenes with several persons great difficulty was found in obtaining people to take part in them; it was necessary to have some variety beyond the assistant, the mechanic, the janitor and occasional students. To the casual reader the characters might represent anybody. Prof. Angell must, however, have studied the figures very carefully, for I confess that, until he mentioned it, I had forgotten the matter and upon looking at the figures again was hardly able to recognise the faces in some of them.

At any rate the book was not intended for those who would know or care for personal matters of this sort.

Prof. Angell also blames me for not giving proper credit to the translators of Wundt's *Vorlesungen*. Here again it is a matter of misunderstanding and misrepresentation. To the rule of no foot-note references *one* exception was made, namely, a reference to this very translation. This was deliberately done to make the translation known to the tens of thousands of readers who would for the first time hear of Wundt's work. I supposed that I had thereby paid off all obligations. If I had put the reference in the preface, which the public never reads, Prof. Angell could not have found the least fault, but, because I selected the most forcible place for it and did not specify exactly where I was indebted to the translation and where to the original, he raises a great noise about "borrowing." I have not heard complaints either from publishers or the translators, but, if they misunderstand my efforts and will express the wish, I shall omit both the quotations and the reference in future editions.

In general, everything "borrowed" in the book is (or ought to be) to the psychologist the most familiar commonplace without need of a reference, while to the public such a reference would be merely an irritation.

The utterly trivial and superficial character of Prof. Angell's tirade is evident to anybody acquainted with the book or with my work; the motive that would lead to such an exhibition is not hard to find.

In conclusion, let me ask the fair-minded reader to remember that it required considerable courage to subject myself to just such sneers and attacks as Prof. Angell's by writing a popular book to aid in establishing laboratories, that the arousal of public interest by my book has done more than anything else could do at the present moment to further the cause of experimental psychology in America, where the funds are controlled by members of the public, and that the scientific principles taught in the book do not yield one jot from the demands of high grade work which I learned at Leipzig, which I have maintained in my *Studies*, and which I have in vain attempted to teach to certain American psychologists.

E. W. SCRIPTURE.

REPLY TO A CRITICISM.

Though I have great reasons to feel myself indebted to Mr John I. Beare for his review of the first volume of my *History of Modern Philosophy*

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in the April number of this Journal, I wish to make some remarks on a few of his objections.

1. In my criticism of the psychological dualism of Descartes I am said to "commit the logical impropriety of judging *Erkenntnistheorie* by the canon of *Psychophysik*" (*Mind*, April, 1896, p. 251). This objection is contradicted by the very doctrine of Descartes himself. Descartes leaves what we now call *Erkenntnistheorie*, as soon as he conceives mind and matter as two substances, two *res*. A substance, a *res*, is an object of knowledge. The problem of the relation between mind and matter is therefore a problem of the relation of *two objects*, and not a problem of the relation of *subject and object*.—I am quite of the opinion of Mr Beare about the difference between *Erkenntnistheorie* and Psychology (or Psychophysics), and I cannot see that I have forgotten this our common view in my criticism of Descartes.

Mr Beare says: "Thought and extension were terms which for him [Descartes] primarily represented the terms self and object. Therefore it is that he asserts so strenuously the impossibility of throwing light on their relation by any process of inductive observation." But this last sentence is in flagrant contradiction to the declaration of Descartes. He asserts that the causal relation of mind and body is a matter of fact, which we learn from experience, though no comparison or ratiocination can make us understand it: "Quod autem mens, quae incorporea est, corpus possit impellere, nulla quidem ratiocinatio vel comparatio ab aliis rebus petita, sed *continua et evidentissima experientia quotidie nobis ostendit.*" (*Epistolae* Renati des Cartes. Francofurti 1692, II. p. 17.) "Quae ad animae et corporis conjunctionem pertinent, non nisi obscure per intellectum solum aut etiam per intellectum imaginatione adjutum cognoscuntur, sed *per sensus clarissime.*" (*Ib.* I. p. 17.)

My point as against Descartes is not—as Mr Beare puts it—that he did not throw light on this problem by any process of inductive *observation*, but just this,—that he took the causal relation as an observed fact and omitted to throw light on it by means of "comparison and ratiocination," which would have shown that no observation can reveal such a relation. He should then have drawn the consequences of his theory of substance and of his principle of the persistence of motion, which later on were drawn by the Occasionalists and Spinoza.

2. Mr Beare says (p. 355): "Whoever will read Höffding's observations (p. 449) on the *Analogy* of Butler, and then those of Mr Leslie Stephen (*An Agnostic's Apology*, p. 31), will, on comparing both, have some ground for conjecturing the source whence the former derived his information." I can assure Mr Beare, that I have not the pleasure of knowing the *Apology* of Mr Stephen. I was even ignorant of the existence of such a book. My reflexions on Butler suggested themselves to me at the study of his book, but I am glad to hear from Mr Beare, that a thinker, whom I—from what I know of him—appreciate so highly, has arrived at the same conclusions. I was very well aware that Butler himself had seen the consequences which could be drawn from his doctrine, and I have (p. 449) not omitted to suggest the manner in which he tries to evade them. But I cannot see that he has been happy in this attempt. "Disingenuity" (the word is Mr Beare's) I should certainly shun against every one, but above all against such a thinker as Joseph Butler, whom I revere as a profound and acute genius.

HARALD HÖFFDING.

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ADVERTISEMENT OF WELBY PRIZE.

A prize of £50, to be called the Welby Prize, is offered for the best treatise upon the following subject:

"The causes of the present obscurity and confusion in psychological and philosophical terminology, and the directions in which we may hope for efficient practical remedy."

Competition is open to those who, previously to October 1st, 1896, have passed the examinations qualifying for a degree at some European or American University.

The donor of the prize desires that general regard be had to the classification of the various modes in which a word or other sign may be said to possess 'meaning,' and to corresponding differences of method in the conveyance or interpretation of 'meaning.' The committee of award will consider the practical utility of the work submitted to them as of primary importance.

The Essays, which may be written in English, French or German, must be typewritten and must extend at least to 25,000 words. They should be headed by a motto, and accompanied by a sealed envelope containing the name of the writer. They may be sent to any member of the undersigned committee of award, and must reach their address not later than October 1st, 1897. The right of publication of the successful treatise is reserved.

PROFESSOR SULLY, 1 Portland Villas, East Heath Road, Hampstead, N.W.

G. F. STOUT, University, Aberdeen, N.B.

PROFESSOR TITCHENER, Cornell University, Ithaca, N.Y.

PROFESSOR KÜLPE, Würzburg, Germany.

Arrangements are being made to add a French member to the Committee.

PHILOSOPHY IN ITS NATIONAL DEVELOPMENTS.

MR JOHN MACQUEEN has pleasure in announcing a Series of Books, dealing with "Philosophy in its National Developments," which has been organised by Professor Knight, of St Andrews University, who will also edit the Series.

The idea underlying the Series is that philosophical opinion in the various Schools which have arisen in History, has not been the exclusive product of the minds of their reputed Founders, but that the characteristics of each Race have also shaped its Philosophy.

Those Great Writers, who are known as the Founders of Systems, will be discussed, and also the lesser writers, who sometimes shew the national "stream of tendency" even more significantly than the greater ones.

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" " GERMANY—G. F. Stout, Esq., St John's College, Cambridge, Anderson Lecturer in the University of Aberdeen, and Editor of *Mind*.

" " FRANCE—Professor L. Lévy-Bruhl, Paris.

" " HOLLAND—Professor Land, University of Leyden.

" " ENGLAND—Professor Knight, University of St Andrews.

" " SCOTLAND—Professor Lawrie, University of Melbourne.

" " AMERICA—Professor Dewey, University of Chicago.

" " SCANDINAVIA, RUSSIA, &c.—Professor Höffding, University of Copenhagen, and W. Bery, Esq.

JOHN MACQUEEN, Hastings House, Norfolk Street, Strand.

ARISTOTELIAN SOCIETY AND *MIND*.

Among the papers which appear in the programme for the next Session of the Aristotelian Society, are "The Relation of Sociology to Philosophy," by the President, "Hegel's Treatment of the Categories of the Subjective Notion," by J. E. McTaggart, "The Relation of Quantity to Number," by B. A. W. Russell, "Types of Will," by A. F. Shand, "The Ideal of Knowledge," by J. H. Muirhead, and others, the titles of which are not yet specified, by Professor Wallace and L. T. Hobhouse. It has been agreed that selected papers for this year should be printed in *Mind*, so that Members of the Society will receive a copy of *Mind* in place of the ordinary volume of the *Proceedings*, which will not be published.

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